



# Interactive Video Suite (Moodle-Plugin)

**Pascal Schmidt**

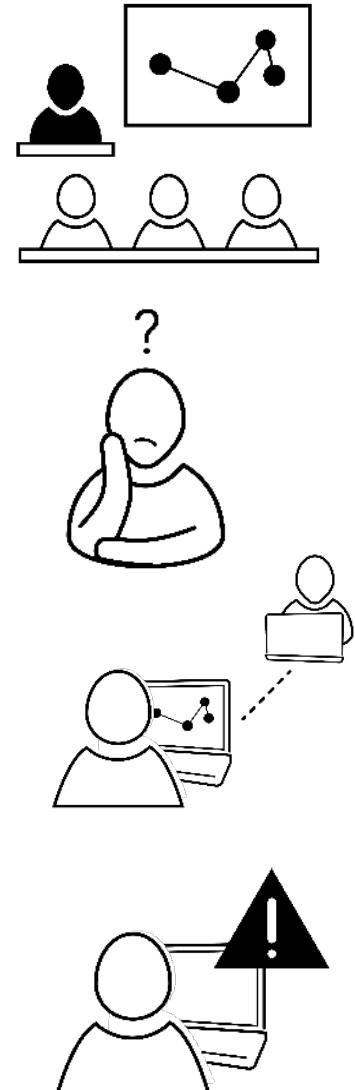
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January 2020

# Agenda

- Market of (interactive) video
- Interactive Video Suite (Moodle-Plugin)
- Why social video learning?
- Examples
- Your use cases?
- Discussion



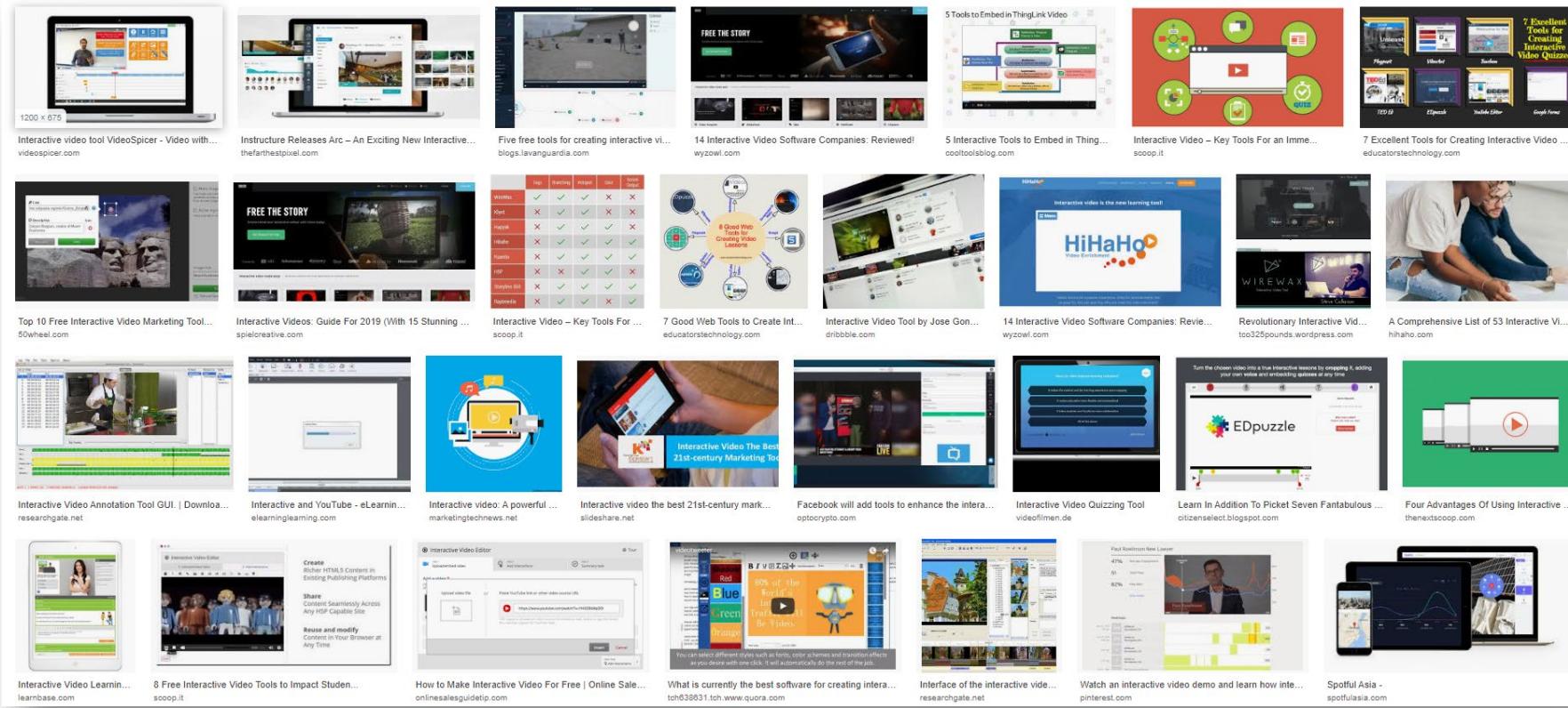
## Video – two sides of a coin

- Videos are a densified, complex and fluid medium.
- Teaching staff should consider three elements for videos:



- 1) **Cognitive load** (distractions, complexity, pauses, structure, ...)
- 2) Promote **student engagement** (i.e. short duration, relevant, conversational style, ...)
- 3) **Active learning features > Interactive Video Suite in moodle**

# Market of (interactive) video

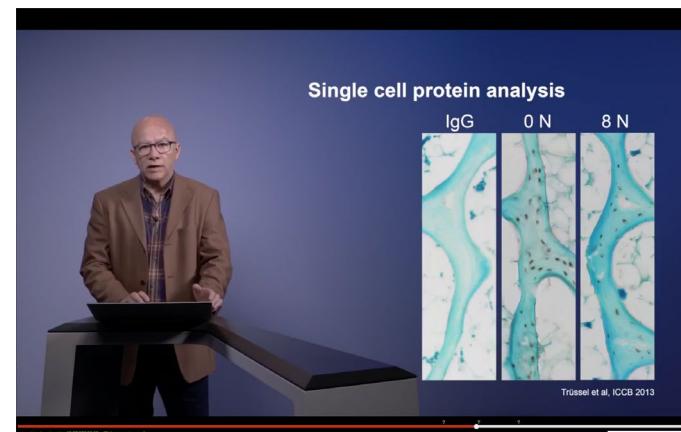


# IVS in a nutshell

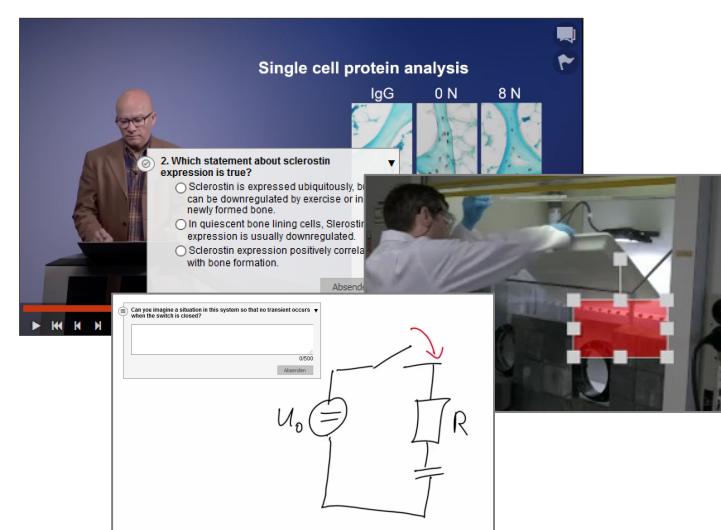
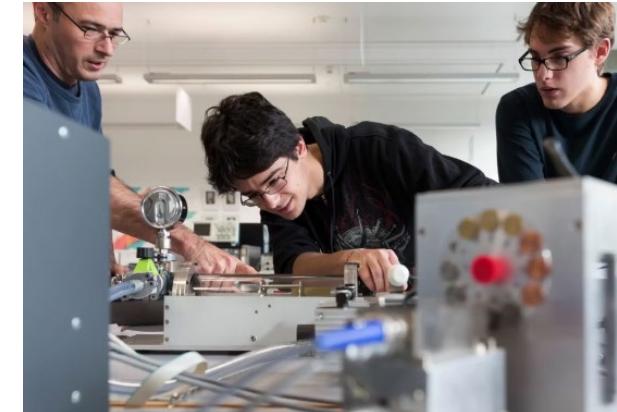
## (Social) Comments



## Questions



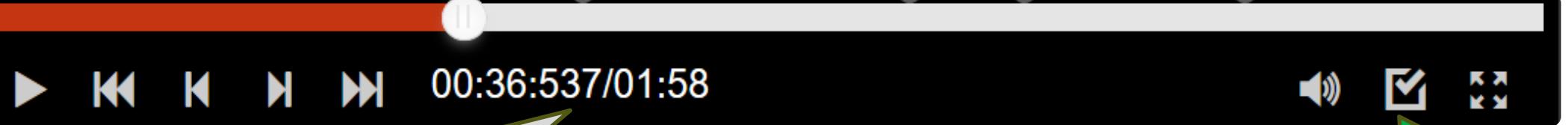
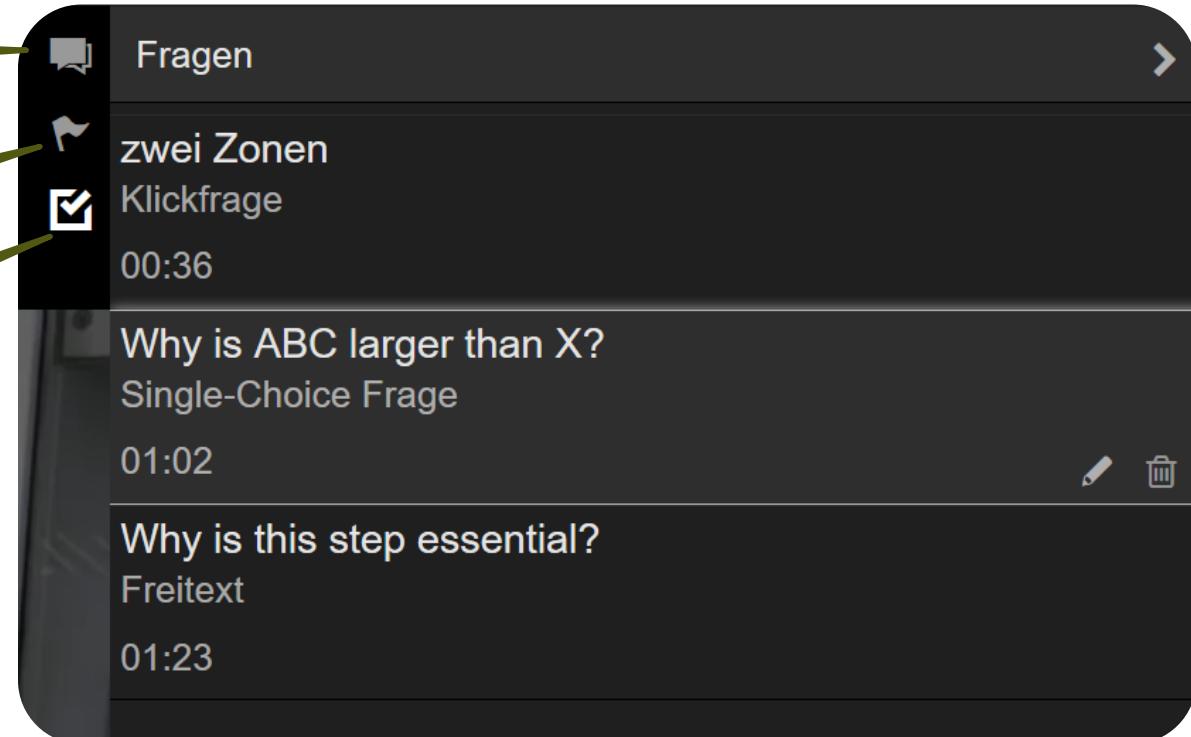
## Editing



Commenting-  
Mode

Editing-Mode

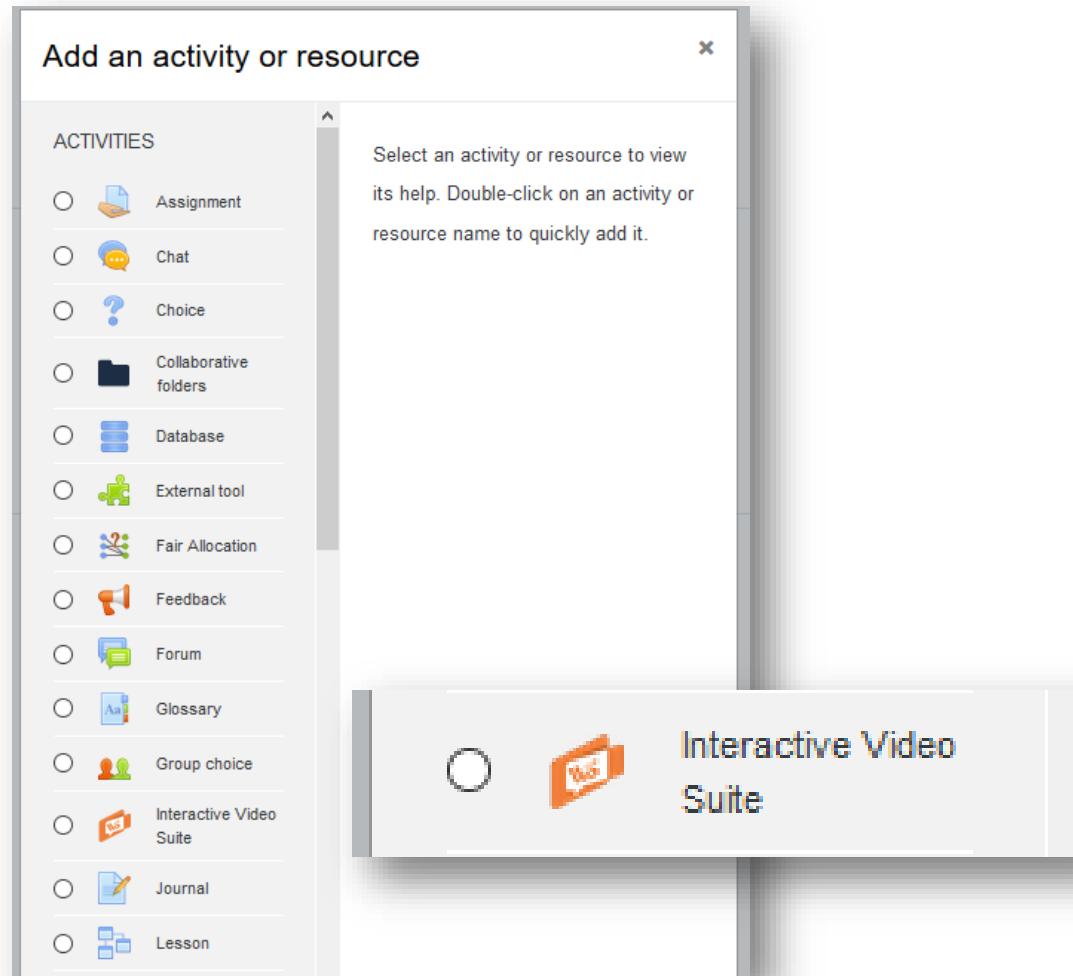
Question-Mode



Precise positioning of comments  
& questions

Question-Mode

# Add an IVS-activity in a moodle course / videos@SWITCH



The screenshot shows the Moodle course editing interface. A modal window titled 'Adding a new Interactive Video Suite to Introduction' is open. In the 'General' section, the 'Interactive Video Suite name' field is populated with 'transients\_electric\_power\_syste'. Below it is a rich text editor. A checkbox labeled 'Display description on course page' is checked. In the 'Switch cast video' section, a dropdown menu shows 'transients\_electric\_power\_syste'. In the 'Opencast Videos' section, there is a button 'Add video' and two video entries: 'Planetary gear animation.mp4' and 'How a 3-pole electric motor works.mp4', both marked with green checkmarks. A sidebar on the right is titled 'Videos' and lists '- Hosting@SWITCH' and '- Special Upload-Plugin'.

# Video-Hosting > SWITCH

The screenshot shows the Moodle interface for the 'IVS-Democourse'. The left sidebar includes links for 'IVS-Democourse', 'Teilnehmer/innen', 'Bewertungen', 'Abschnitte', 'Aktivitäten', 'Foren', 'Interactive Video Suites', and 'Dashboard'. The main content area displays the course title 'IVS-Democourse' and navigation links like 'Dashboard / Kurse / Testkurse / LET.intern / IVS-Democourse'. A yellow callout box highlights the following steps:

- Upload in Block «Opencast Videos»
- Auto-Transform into needed formats

On the right, there are two sections: 'Opencast Videos' (listing files like 'Planetary gear animation.mp4') and 'Videos, die gerade zum Streaming-Server hochgeladen werden' (listing files like '067.MOV' and '067.MOV (Copy 1)').

**Opencast Videos**

- ✓ Planetary gear animation.mp4
- ✓ Planetary gear animati
- ✓ How a 3-pole electric n
- ✓ How a 3-pole electric n
- 1)
- ✓ Synchronisation beim I
- Funktionsweise.mp4

**Videos, die gerade zum Streaming-Server hochgeladen werden**

Datum	Name	Größe	Status	Fehler	Autor/in
6. Februar 2019, 11:12	067.MOV				
6. Februar 2019, 11:12	067.MOV (Copy 1)				

**Anfangsdatum**   **Enddatum**   **Name**   **Ort**   **Veröffentlicht**   **Status**

internal, oaipmh-default, switchtube-channel, switchtube-video, switchcast-api, switchcast-player, switchcast-annotate

internal, oaipmh-default, switchtube-channel, switchtube-video, switchcast-api, switchcast-player, switchcast-annotate

**LET – Lehrentwicklung und -technologie**

# Social Video Learning – software company use cases since 2007



# First Order Viewing

KNOWN

← facts

analytical

cooperative

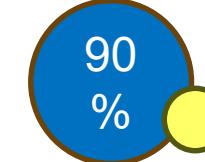
critical, creative → NEW

## One view

**Assessment:** „right-wrong“

Ensure theoretical concepts and handling of objects, things, ...

→ Questions



research-based

research-oriented

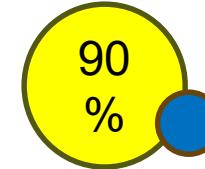
research

## Many views

**Assessment:** „suited or less suited“

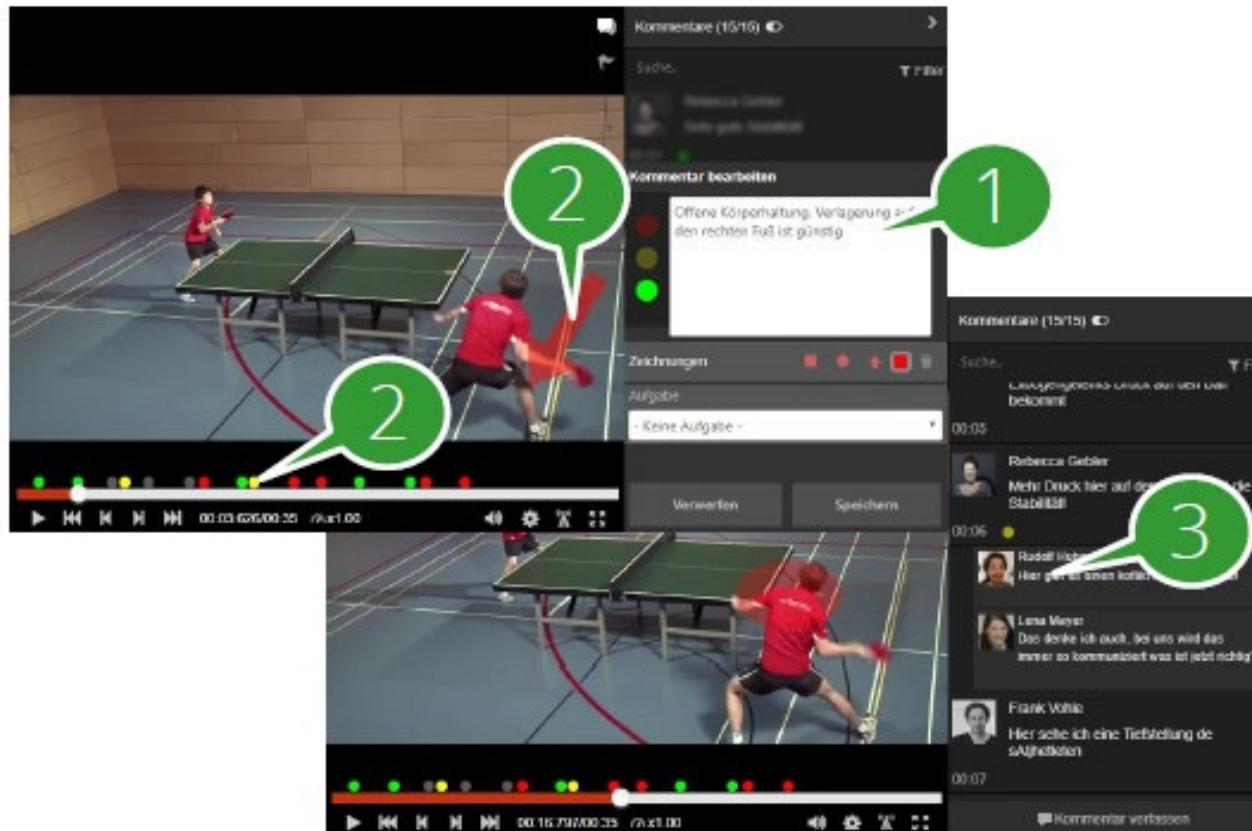
- Explore social practices
- Discuss interpretations

→ Social Video Learning



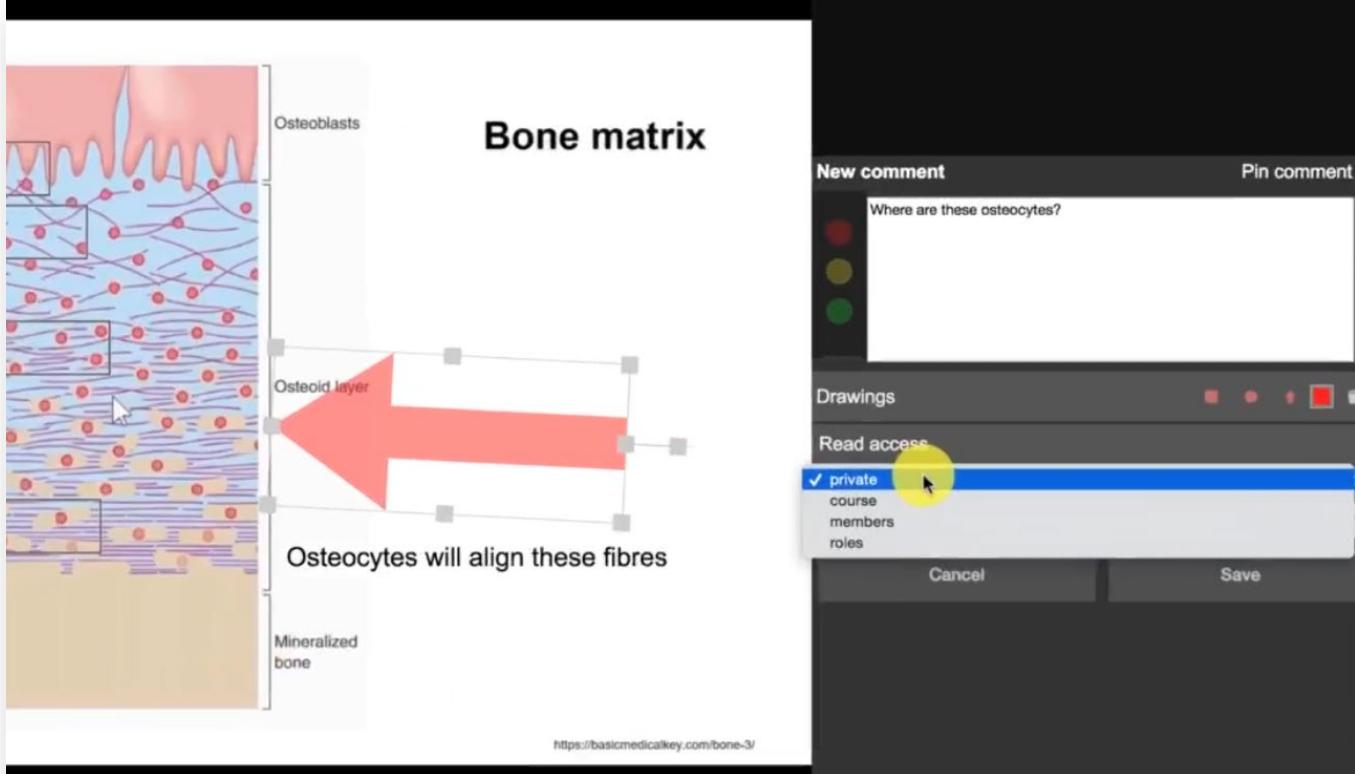
Huber & Reinmann, 2019

# Interactive Video Suite – technical principle



1. Stop video, add comments to the video-image
2. Add markings and tags
3. View comments of others and respond to those comments

# Interactive Video Suite – technical principle



# Example: Development of reflection skills of teaching assistants

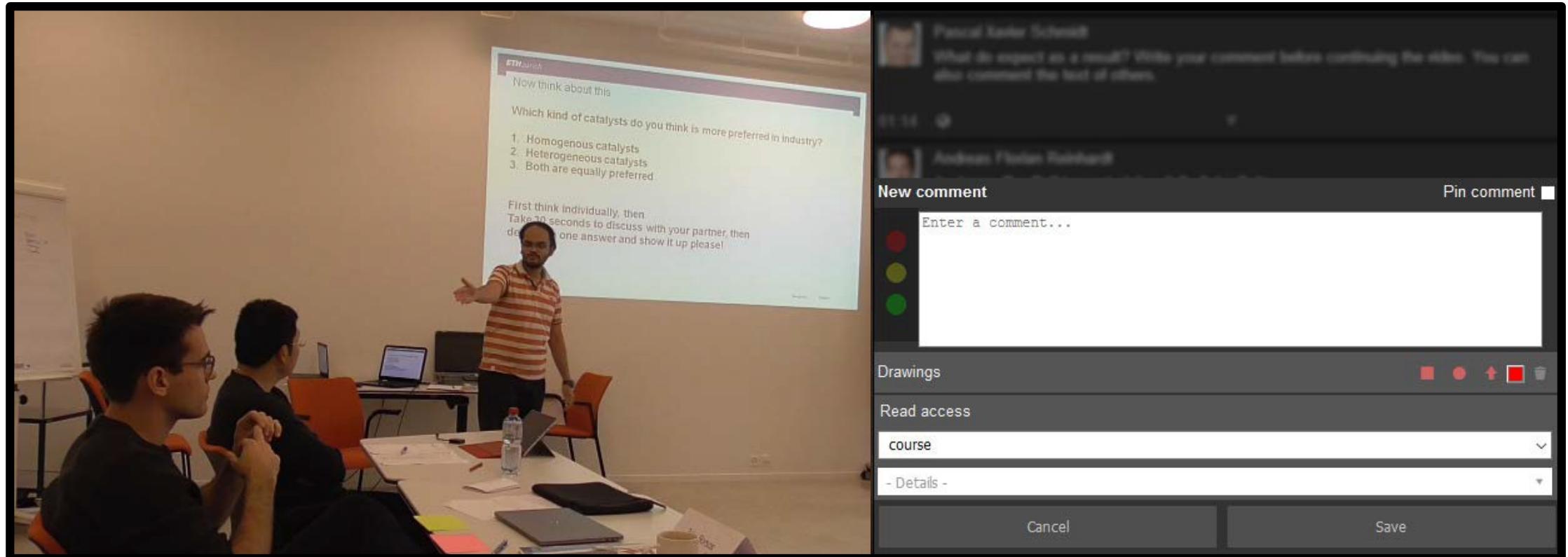


Guided reflections of action routines promote thought processes (even among experienced people) by:

- doubt
- a perceived imbalance between discussion partners

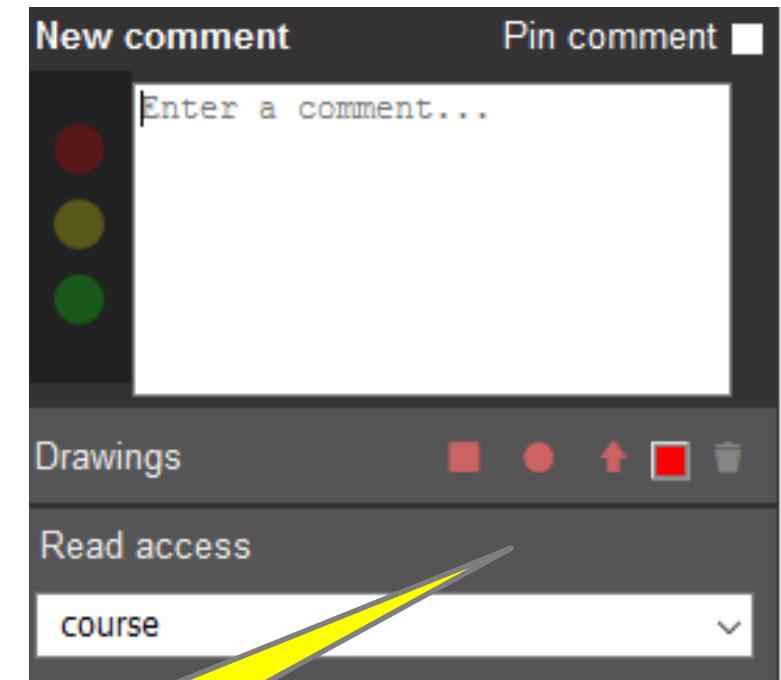
(Mezirow, 1981; Dewey, 2002 [1910], S. 15, 39)

# Example: Development of reflection skills of teaching assistants



The image is a composite of two screenshots. On the left, a man in a red and white striped shirt stands in front of a whiteboard in a classroom setting, gesturing towards the board. Two students are seated at a desk in the foreground, facing him. The whiteboard displays a poll question: "Which kind of catalysts do you think is more preferred in industry?" with three options: 1. Homogenous catalysts, 2. Heterogeneous catalysts, 3. Both are equally preferred. Below the question, instructions read: "First think individually, then Take 30 seconds to discuss with your partner, then do one answer and show it up please!" On the right, a digital annotation interface is shown. It features a video player at the top with a comment overlay for "Pascal Xavier Schmid". The comment says: "What do expect as a result? Write your comment before continuing the video. You can also comment the text of others." Below the video is a "New comment" input field containing "Enter a comment...". There are red, yellow, and green circular icons next to the input field. To the right is a "Pin comment" button. Further down, there are sections for "Drawings" (with drawing tools) and "Read access" (set to "course"). A dropdown menu shows "- Details -". At the bottom are "Cancel" and "Save" buttons.

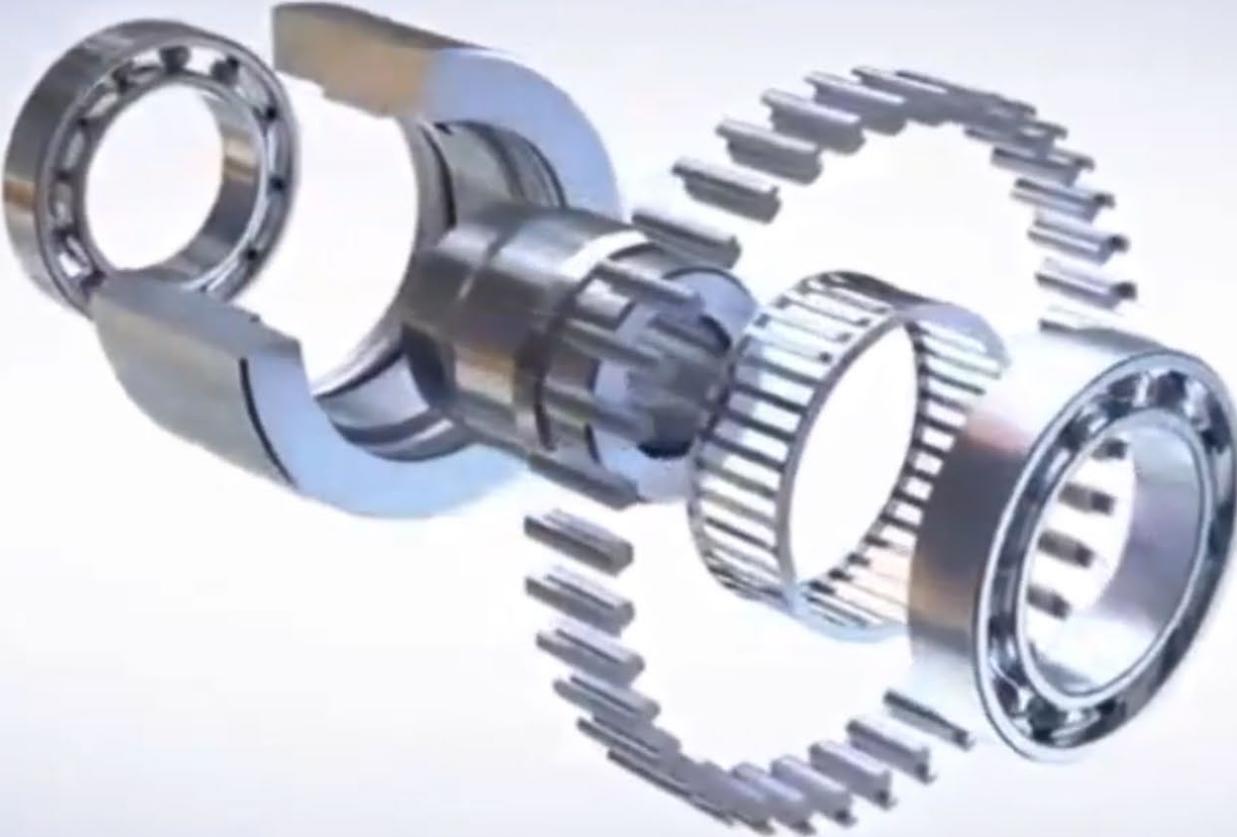
# Task for students: Create a video on concept ABC and comment videos of peers



Optional: Label comment with markings & «traffic colors» - set reading access (course or private)



Teachers can insert a «trigger question» as a reflection task



Kommentare (1/1)



Suche..

Filter



Pascal Xavier Schmidt

((Als Teacher kann man eine "Triggerfrage" stellen)) -  
Die Antworten sind sichtbar und Peer-Feedback ist  
möglich))-  
Welche Einsatzzwecke sehen Sie für XYZ?

00:09



Xavier Schmidt Aus meiner Sicht könnte man XYZ text  
text ABC



Bin nicht einverstanden dass ABC - man sieht  
deutlich dass xy

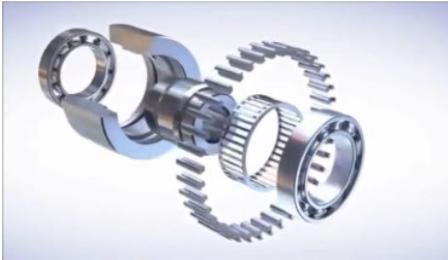
Verwerfen Speichern

# View of comments & discussions



Pascal Xavier  
Schmidt

00:09:282



Freitag, 8. November 2019, 11:39  
(Als Teacher kann man eine "Triggerfrage" stellen) - Die Antworten sind sichtbar und Peer-Feedback ist möglich)- Welche Einsatzzwecke sehen Sie für XYZ?



Xavier Schmidt

Aus meiner Sicht könnte man XYZ text text ABC

Freitag, 8. November 2019, 11:44



Pascal Schmidt

Bin nicht einverstanden dass ABC - man sieht deutlich dass xy

Freitag, 8. November 2019, 11:49



Pascal Schmidt

00:12:472



Freitag, 8. November 2019, 11:50  
Proaktiver Kommentar oder Frage von Student

Show comments

Show all comments of users

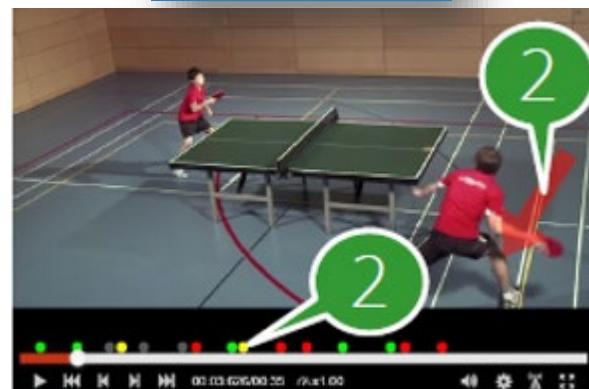
All comments and markings will appear, incl. the corresponding position picture of the video and possible re-comments by other users

# Video as a tool to see differently



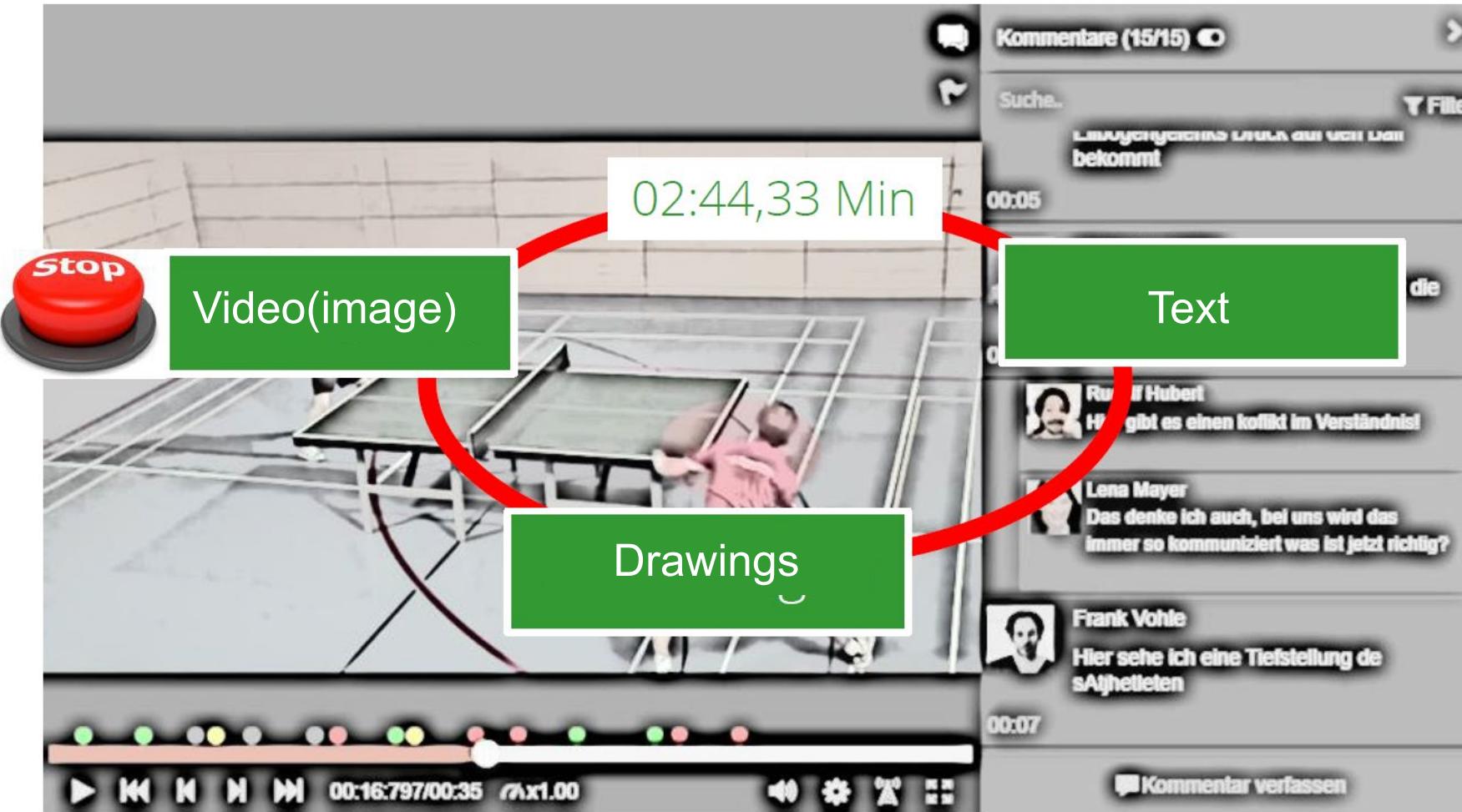
Catch reality / “Freeze” a situation/moment

1. Repeat > viewing with a **distance**
2. Manipulate Video-Speed  
> See in **new/different way**
3. Set own focus > see **more precisely/deeper**
4. Change **perspective** (think being someone else in the video)
5. Explore **spaces** (360-Degree-Videos)



©Frank Vohle, www.ghostthinker.de

# Mix of signs



Precise moment  
and combination  
of signs makes it  
more clear for  
myself, **what**  
**I see and think.**

**Iterate and  
elaborate own  
text.**

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# Different levels of observation / Deeper reflections

First Order

Observe things & situations (video)

00:16:797/00:35 x1.00

Kommentar verfassen

Kommentare (1/1) Suche.. Filter

Solène Schaub Weiss jemand, wo bei perfekten Substituten und bei perfekten Komplementen die optimalen Konsumpunkte liegen?

09:07 Sibylle Vautravers Bei perfekten Komplementen liegt der optimale Konsumpunkt auf dem Eckpunkt der Indifferenzkurve

Marco Joe Allorfer Wie Sibylle richtig sagt, liegt der optimale Konsumpunkt bei perfekten Komplementen (Schnittpunkt der äussersten IK mit der BG) jeweils im Eckpunkt der IK.

Bei perfekten Substituten kommt es auf die Steigung der IK und der BG an. Wenn diese Steigungen genau übereinstimmen ist jedes Güterbündel auf der BG optimal. Wenn nicht, gibt es eine Randlösung, das heisst, der optimale Konsumpunkt liegt auf X oder Y-Achse, dort wo sich BG und äusserste IK schneiden. Das heisst, der Konsum nur eines der Güter (und Null des anderen) ist optimal.

Kommentar verfassen

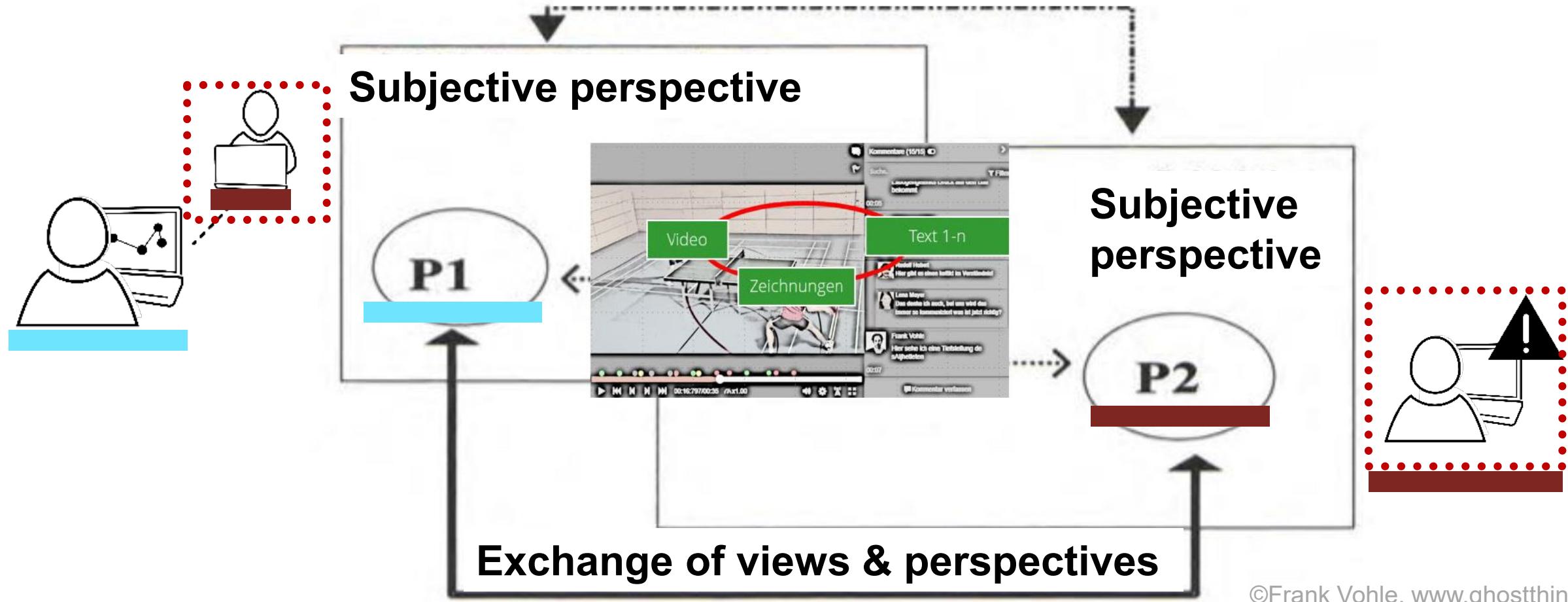
Question of student

Feedback by peer

Feedback by teacher on BOTH – question and peer answer

## Find the common ground

### Change of perspectives



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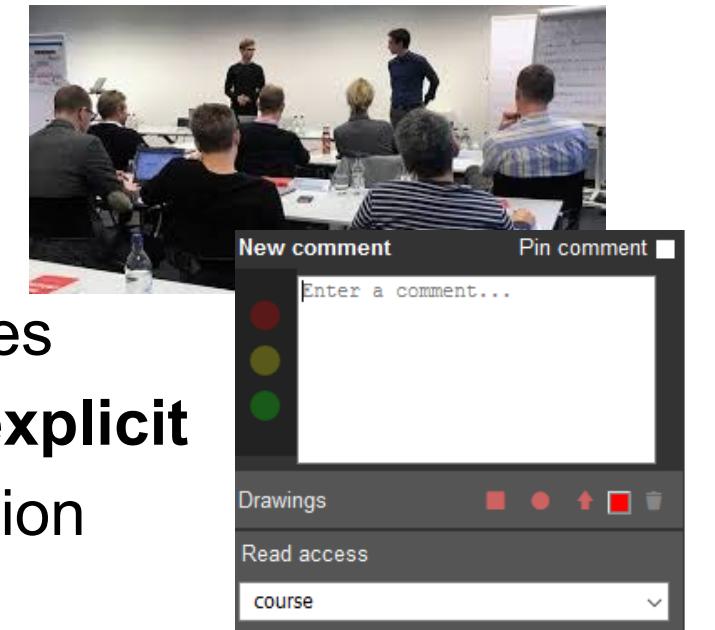
# Focus: Teacher Education / Social skills of students



- Social situations (e.g. coaching, group work, design-thinking workshop)
- teaching situations (e.g. giving feedback, dealing with questions, collaborative work between faculty and students)
- documenting teacher education

# Potential of video reflection for teacher training

- Time decoupling
- Deal with the high **complexity** of teaching situations
- **Authentic confrontation** with real situations and processes
- **Subjective theories** about observed processes become **explicit**
- Find **alternative** pedagogical or methodical options for action
- Closer link of obvious **practice to theory**
- Finding a **common language** among teachers and fostering collegial communication
- Bring in **multiple perspectives into the discussion** with documented, real-life recording
- Making **competencies** of individuals **visible** and documenting them



Dorlöchter et al., 2006

## Needs & Disadvantages

- **Data protection:** All data protection issues must be clarified.
- **Organizational & technical effort** must be minimized. With today's video recording & editing tools this should be possible.
- Video recordings do not contain the entire reality. **Emotional aspects** that are not captured by the camera **must be addressed** accordingly in the reflection.
- Video recordings are often perceived as **disturbing**, students and teachers can feel exposed & embarrassed. A **safe and a sensitive setting** is required.

Schwedes, H. (2005).

## Needs & Disadvantages

- The benefit in viewing video recordings of teacher's own teaching practice will only **gradually** become apparent to the students. A cautious approach is therefore necessary.
- Overall **time effort** is considerable, but the **benefit** justifies it. A careful **planning** of the didactic scenarios is key.

Schwedes, H. (2005).

# Insert questions

At any point you can insert a question into the video:

1. **Single Choice** (one correct or one best answer)
2. **Click-Question** (find a hotspot in the video, i.e. a dangerous element in a setup)
3. **Essay** (insert free text, i.e. writing «what is the next step here?» or «what happens here and why?»)

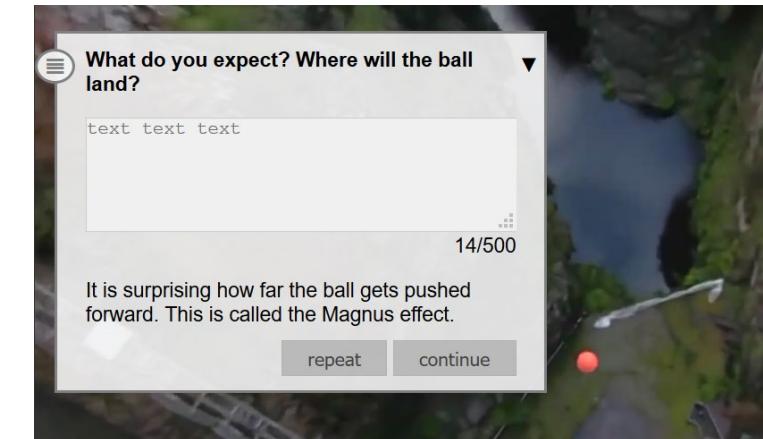


1



2

Invisible target zone  
to be clicked



3

# Current use cases @ETH

**Bone macrostructure and strength**

2. What could be a reason for the significant difference in bone strength between females and males in the C3.B6-*lt/lt* strain?

Bone strength

$R^2_{adj} = 0.90$

$R^2_{adj} = 0.51$

C3.B6-*lt/lt* (open circles)  
B6-*lt/lt* (open squares)

Bone size / bone mass

Predicted bone strength

$R^2_{adj} = 0.95$

$R^2_{adj} = 0.89$

C3.B6-*lt/lt* (open circles)  
B6-*lt/lt* (open squares)

Measured bone strength

Absenden

0/500

07:54:27/08:18 Kommentar verfassen

01:55:662/08:56 Kommentar verfassen

Sie müssen exakt 5 mL der Probe auf die Säule geben. Mit welcher Pipette arbeiten Sie?

Messpipette  
 Pasteurpipette  
 Vollpipette

Nein. Mit einer Pasteurpipette können keine Volumina abgemessen werden.

Falsch Wiederholen Weiter

01:55:662/08:56 Kommentar verfassen

Ursachen und Effekte des Pestizideinsatzes in der Schweiz

Abb. 1: <http://www.umweltkinstift.org>

Julia Vogt  
Sehr passendes Bild und guter Einstieg  
00:10

Viviane Baeriswyl  
Der Einstieg ins Video ist euch gut gelungen. Man weiss, um was es geht  
00:11

Viviane Baeriswyl  
gute, übersichtliche Folien mit den wichtigsten  
00:30

Dominique Schmid

00:00:000/04:36 x1.00 Kommentar verfassen

# Knowledge-Check (Pre-Knowledge & Understanding)

## > SINGLE CHOICE

**Konventionelle**

Durch welchen Mechanismus reichert sich dieser Radiotracer im der Lunge an (oder eben nicht an)?

Patient mit chronisch:

- Passive Diffusion/Perfusion
- Metabolisches Trapping
- Ionentransport

1. Bei Vd.a. Lungenembolien meist erst eine KM-CT durchgeführt (außer der Patient ist Nierenkrank)

2. Bei chronisch rezidivierenden, kleineren Embolien kann die CT falsch negativ sein.

85 j. Frau. Lungenerkr. zunehmen

ETH zürich

U<sub>s</sub>

R

Feedback

Wiederholen Weiter

High Voltage Laboratory

10:22:476/13:54 Kommentar verfassen

**Microdamage in alendronate treated bone**

3. What kind of age-related deterioration can lead to the failure of a normal trabecular bone plate?

- Holes made flat bones (osteoporosis) can act as stress risers
- Callus formation can lead to a detrimental shift of forces acting on the bone.
- Age-related shift of bone mass distribution creates weak sites

incorrect repeat continue

Alendronate: N = 2

No cracks found

Voide et al, 2007

Sie müssen exakt 5 mL der Probe auf die Säule geben. Mit welcher Pipette arbeiten Sie?

- Messpipette
- Pasteurpipette
- Vollpipette

Nein. Mit einer Pasteurpipette können keine Volumina abgemessen werden.

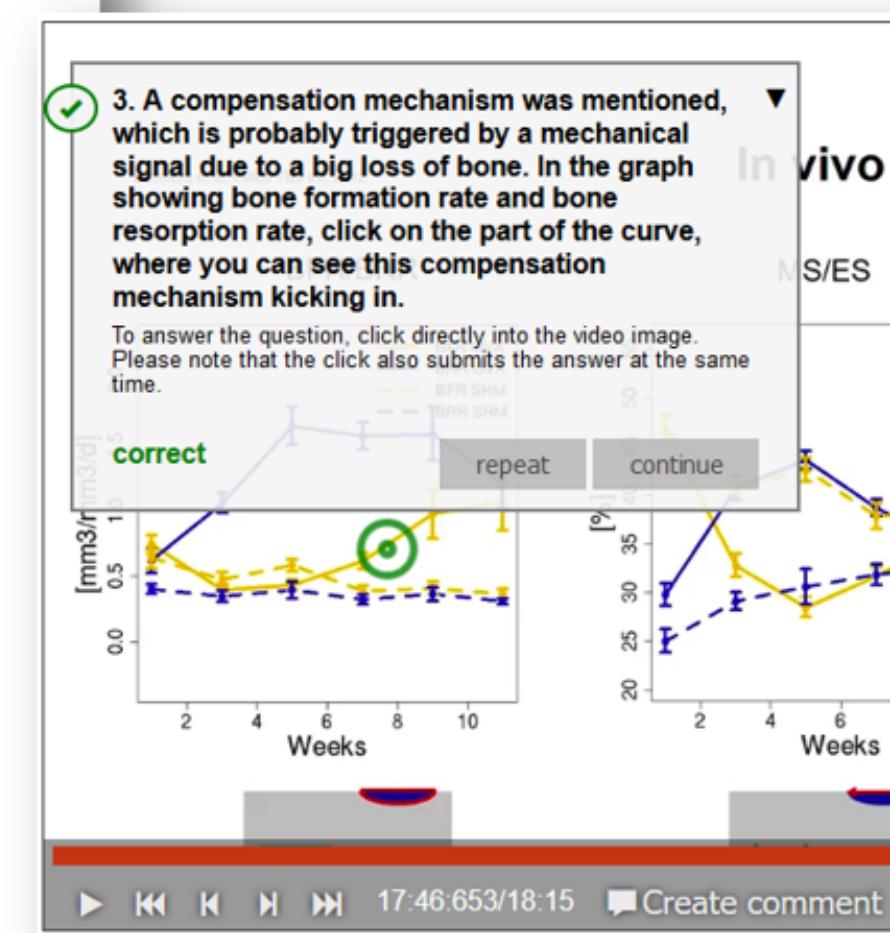
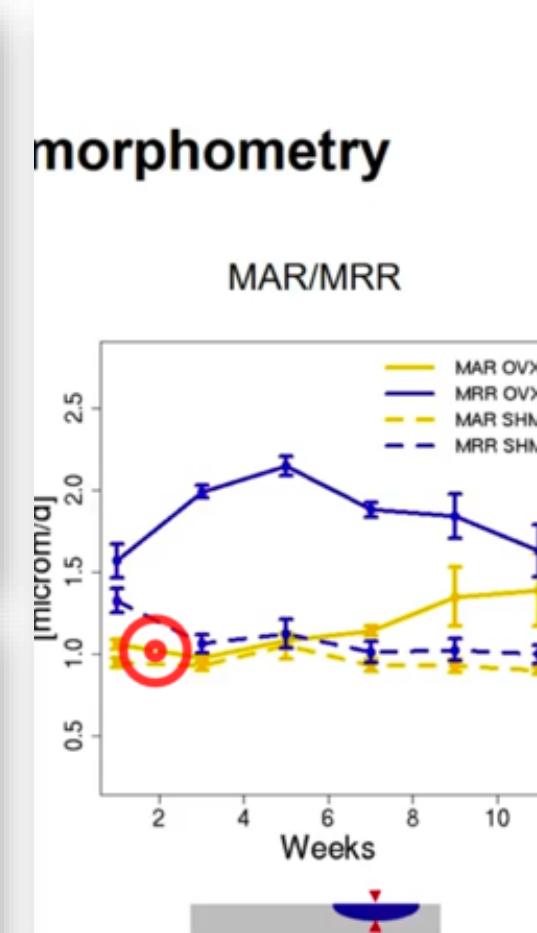
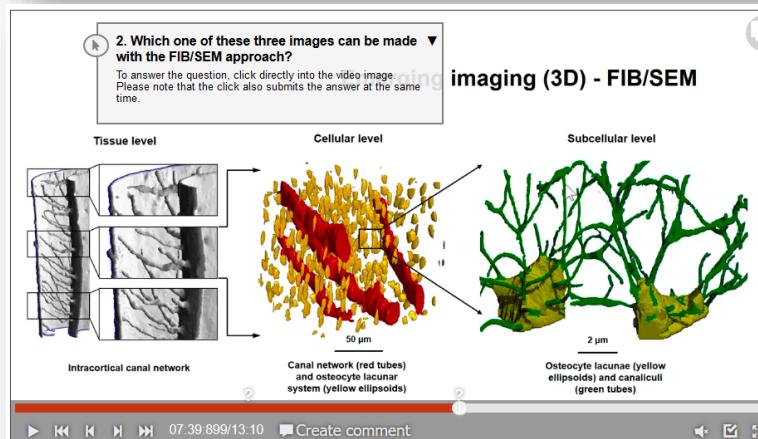
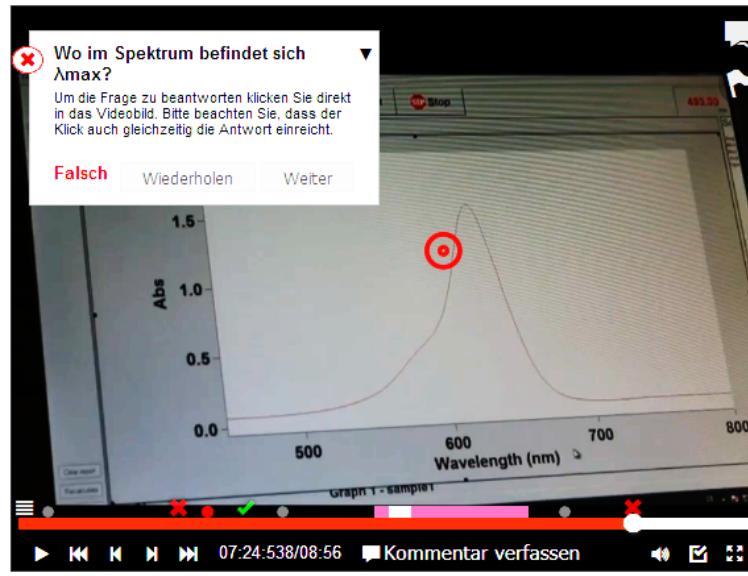
Falsch Wiederholen Weiter

Feedback

01:55:662/08:56 Kommentar verfassen

# Knowledge-Check (Pre-Knowledge & Understanding)

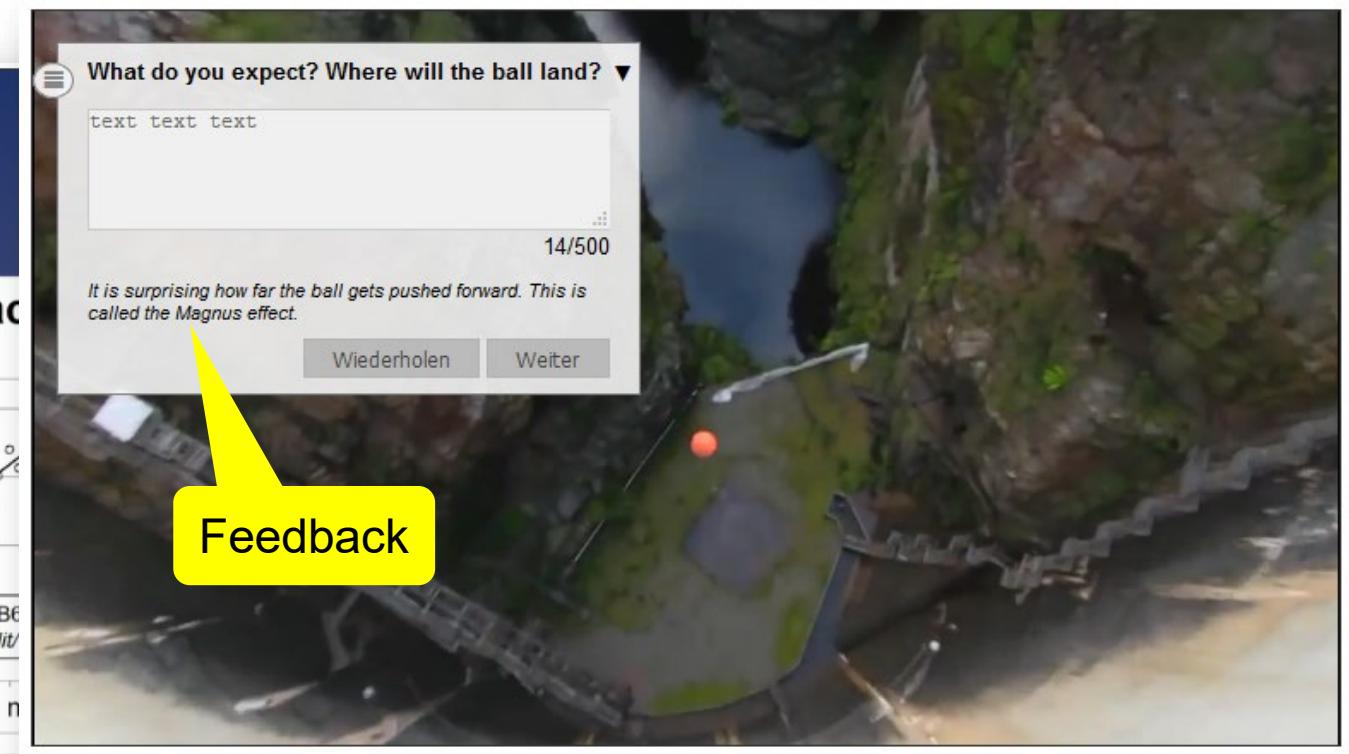
## > Click-Zone



# Knowledge-Check (Pre-Knowledge & Understanding)

## > Write short text

A screenshot of a video conference interface. On the left, a man with glasses and a brown jacket is speaking. On the right, there is a graph titled "Bone mac" and a text input field. The graph has two data series: C3.B6 (circles) and B6-lit/lit (squares). The y-axis is labeled "Bone strength" and the x-axis is labeled "Bone size / bone n". The legend indicates: C3.B6 (circle), B6-lit/lit (square). The R<sup>2</sup> adj values are 0.90 and 0.51 respectively. Below the graph is a text input field with placeholder "text text text" and a character count of 14/500. A yellow arrow points from the word "Feedback" in a yellow box to the text input field. At the bottom, there are video controls (play, back, forward, stop), a timestamp (07:54:27 1/08:18), a comment input field ("Kommentar verfassen"), and a feedback icon.



Feedback

# Results overview

Show results

[Summary](#) [Questions](#)

Overview by questions

Question ID	Title	Question	Question type	First attempt: correct	Last attempt: correct	Participation
10		Where do you see a warning sign?	Click question	100 %	100 %	5 / 13
11		What do you expect? Where will the ball land?	Essay	N/A	N/A	4 / 13
141		Warum dieser Kamin?	Essay	N/A	N/A	0 / 13
12		Why was this idea dropped?	Single-choice question	75 %	75 %	4 / 13

Show results

Question ID: 4		Question type: Single-choice question		Label: Wieviele Zahlen sehen Sie?	
Question: Wieviele Zahlen sehen Sie?					
Name	User-ID	First attempt	Retries	Last attempt: correct	
Julia Kehl	5	0	3	1	1
Jonas Lanz	33012	1	4	1	0
P Xavier Schmidt	29635	-	-	-	-
Xavier Schmidt	69087	0	1	5	1
Marinka Valkering-Sijssling	5185	-	-	-	-

Show overall results of questions

For each question there is detailed information about the users:

- First try correct?
- Number of repetitions?
- Last attempt correct?

# Detailed results view

Fragenresultate anzeigen

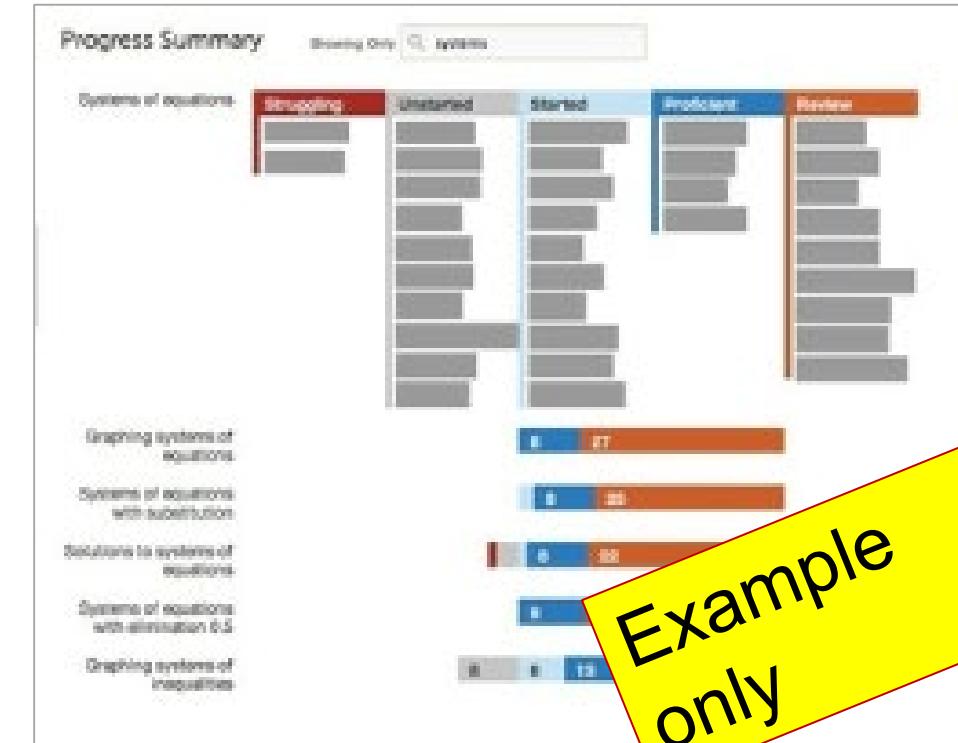
<b>Fragen ID:</b> 293	<b>Fragen Typ:</b> Freitext	
<b>Frage:</b> Was passiert wenn .....		
<b>Name</b>	<b>Pers-ID</b>	<b>Erste Antwort</b>

Xavier Schmidt	69087	Es wird 123 passieren weil text text text
Marinka Valkering-Sijssling	5185	-

<b>Fragen ID:</b> 294	<b>Fragen Typ:</b> Single-Choice Frage	<b>Bezeichnung:</b> Welche Aussage trifft zu?
<b>Frage:</b> Welche Aussage trifft zu?		
<b>Name</b>	<b>Pers-ID</b>	<b>Erster Versuch</b>
		<b>Korrekt</b>
		<b>Gewählte Antwort</b>
Xavier Schmidt	69087	0
Marinka Valkering-Sijssling	5185	-

# Overall report about student activity in videos

A	B	C	D	E	F	G	H	I	J	K
Question ID	Question type	Title	Label	Name	User-ID	Correct	First attempt	Retries	Last attempt	Last attempt
							Selected answer		Correct	Selected answer
473	Click question	Where is the book?	Tn4C 181002-15-49	24	-	-	-	-	-	-
473	Click question	Where is the book?	Tn5IE 181002-15-50	25	-	-	-	-	-	-
473	Click question	Where is the book?	Tn6F 181002-15-51	26	-	-	-	-	-	-
473	Click question	Where is the book?	Karin Brown	40	1	-	0	1	-	-
473	Click question	Where is the book?	Kristina Isaacson Studer	43	-	-	-	-	-	-
473	Click question	Where is the book?	Jonas Lanz	5	1	-	0	1	-	-
473	Click question	Where is the book?	Pascal Student	22	0	-	1	1	-	-
473	Click question	Where is the book?	Melanie Walter	39	-	-	-	-	-	-
474	Essay	What do you think of this room and the furniture?	Tn4C 181002-15-49	24	-	-	-	-	-	-
474	Essay	What do you think of this room and the furniture?	Tn5IE 181002-15-50	25	-	-	-	-	-	-
474	Essay	What do you think of this room and the furniture?	Tn6F 181002-15-51	26	-	-	-	-	-	-
474	Essay	What do you think of this room and the furniture?	Karin Brown	40	-	cb	-	-	cb	-
474	Essay	What do you think of this room and the furniture?	Kristina Isaacson Studer	43	-	-	-	-	-	-
474	Essay	What do you think of this room and the furniture?	Jonas Lanz	5	-	Woody	-	-	Woody	-
									This is my text text -lkdfj lkdfj kdsjgf kdsjgf djasgtjasgasdg	
474	Essay	What do you think of this room and the furniture?	Pascal Student	22	-	This is my text text -lkdfj lkdfj kdsjgf kdsjgf djasgtjasgasdg	-	-	djasgtjasgasdg	-
474	Essay	What do you think of this room and the furniture?	Melanie Walter	39	-	-	-	-	-	-
475	Single-choice questior	What is the colour of the wall in the background?	Tn4C 181002-15-49	24	-	-	-	-	-	-
475	Single-choice questior	What is the colour of the wall in the background?	Tn5IE 181002-15-50	25	-	-	-	-	-	-
475	Single-choice questior	What is the colour of the wall in the background?	Tn6F 181002-15-51	26	-	-	-	-	-	-
475	Single-choice questior	What is the colour of the wall in the background?	Karin Brown	40	1	2	4	1	2	
475	Single-choice questior	What is the colour of the wall in the background?	Kristina Isaacson Studer	43	-	-	-	-	-	-
475	Single-choice questior	What is the colour of the wall in the background?	Jonas Lanz	5	0	3	0	0	3	
475	Single-choice questior	What is the colour of the wall in the background?	Pascal Student	22	1	2	1	0	1	
475	Single-choice questior	What is the colour of the wall in the background?	Melanie Walter	39	-	-	-	-	-	-
476	Single-choice questior	Question 4: How man bars do you see?	Tn4C 181002-15-49	24	-	-	-	-	-	-
476	Single-choice questior	Question 4: How man bars do you see?	Tn5IE 181002-15-50	25	-	-	-	-	-	-
476	Single-choice questior	Question 4: How man bars do you see?	Tn6F 181002-15-51	26	-	-	-	-	-	-
476	Single-choice questior	Question 4: How man bars do you see?	Karin Brown	40	0	4	0	0	4	
476	Single-choice questior	Question 4: How man bars do you see?	Kristina Isaacson Studer	43	-	-	-	-	-	-
476	Single-choice questior	Question 4: How man bars do you see?	Jonas Lanz	5	1	2	2	0	3	



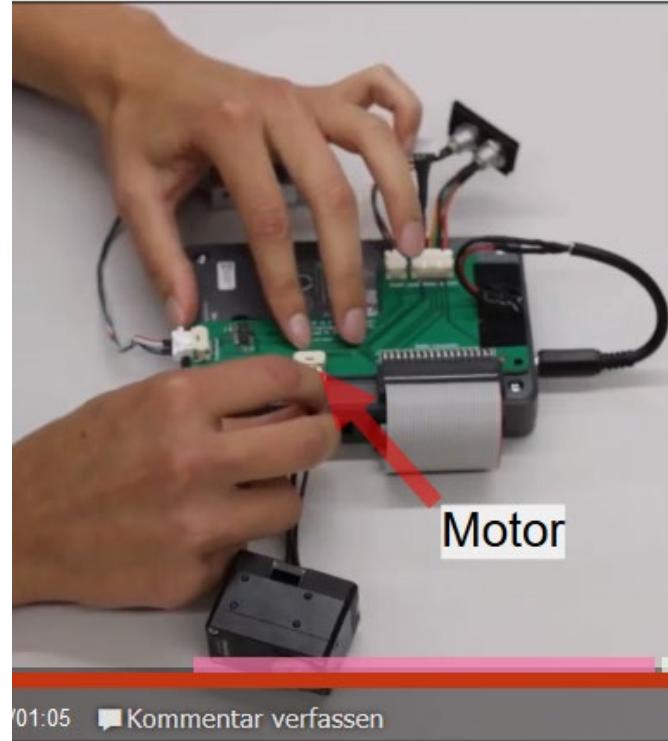
# Focus 1: Operation of devices & machines



## Laboratory situations / operation of machines, devices

- show potential dangers & consequences
- in order to show (to "dramatize") the consequences of operating errors, video feedback shall be increasingly used

# Special feature: Editing video fast and simply directly in the IVS-Player



New playback command

Label (optional)

-Select option-

-Select option-

Sequence

Drawing

Text

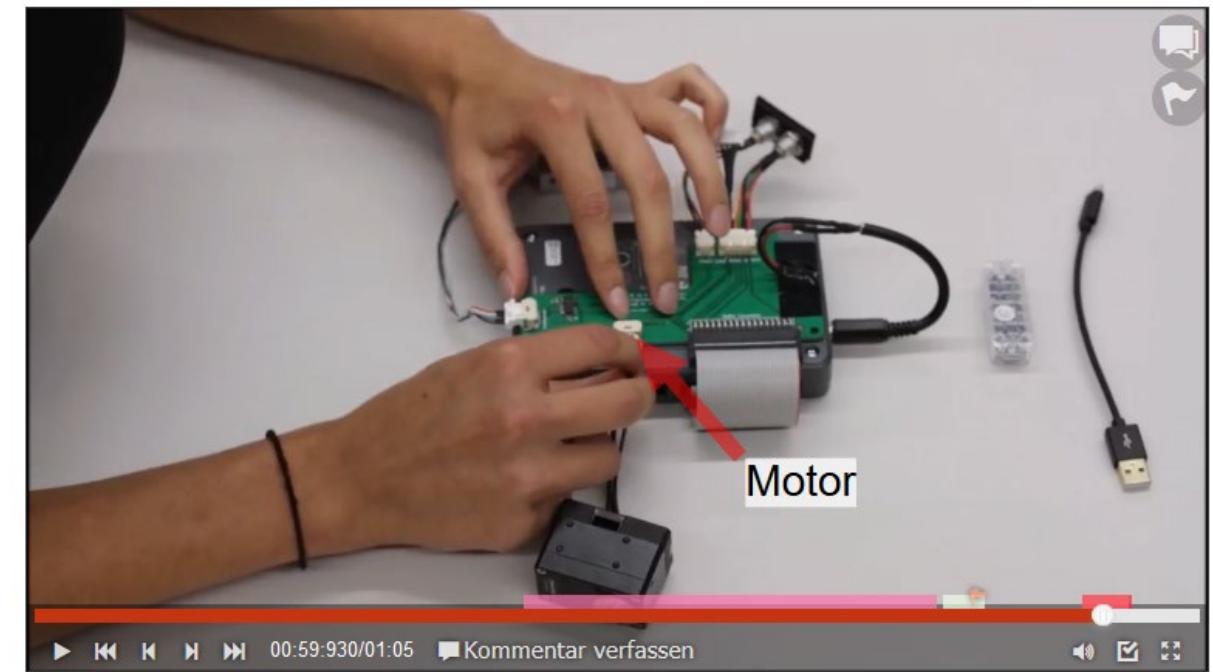
Pause

Playback rate

Zoom

A screenshot of a software menu titled "New playback command". The menu items listed are: Label (optional), -Select option-, -Select option-, Sequence, Drawing, Text, Pause, Playback rate, and Zoom. The "Zoom" option is highlighted with a blue background.

## Edit Video – Explain & Show (markers, text, zoom, etc)



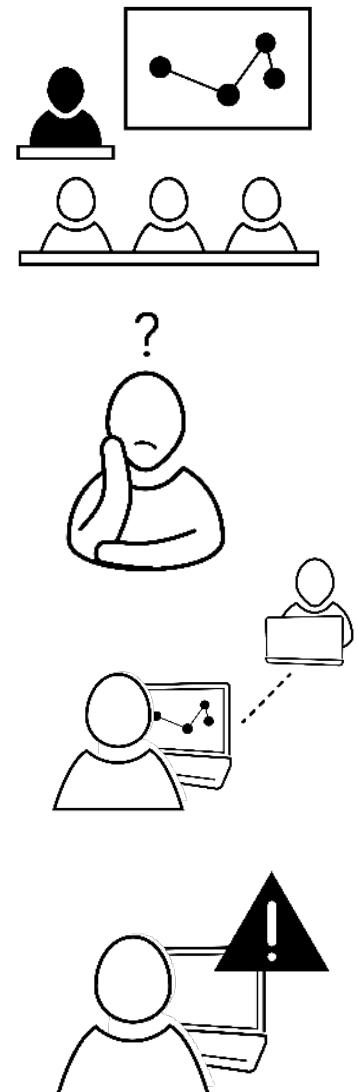
# Summary: Benefits of Interactive Video Suite

## For teachers

- **Actively engage students with a topic** in a video which contains interactive elements, tasks and questions (motivation)
- View and better understand the **prior knowledge, misconceptions** & understanding of students regarding a topic or concept (guide and adapt proces & impact)
- Collect thoughts, ideas, reflections and **questions of ALL students** about a topic (foster critical thinking, guide learning process)
- Gain feedback on the **teacher questions**, based on detailed answer patterns – is the question appropriate, helpful, too hard, too easy, just right? (improve format. assessment)

## For students

- Become more engaged in the **preparation** of face to face lessons
- Better understand own **knowledge, misconceptions & understanding** regarding a topic or concept
- Compare own opinions and reflections with those of **peers**
- Easy and attractive **repetition** and self-assessment regarding topics and concepts by revisiting videos, questions & comments



## SUMMARY: Social Video Learning - Method

- **Deep reflection** on content
- It combines the advantages of video learning with those provided by personal and direct **exchange**.
- Structured and guided by assignments, the participants learn to **watch carefully** and **comment on relevant situations** directly in the video.
- These **comments** can be **shared** amongst all group members and be **discussed** directly within the video.
- Goal is to develop real **competences**.

# References

Links around good practice for video, interactive videos and IVS-Manual, ETH documents & checklists

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## Trials / Individual costs

Free trial for 2 months and 35 participants

**2 models for individual prices** – please contact Rebecca Gebler  
[rebecca.gebler@ghostthinker.de](mailto:rebecca.gebler@ghostthinker.de) / Tel. +49 821 – 40821205

1. Use for one course (for xy months)
2. User for all moodle users of your organization (per year)