

Boost your laboratory education with interactive videos and humor

This project is sponsored by SURF

<https://www.surf.nl/interactieve-videoprotocollen-om-hogere-orde-leren-tijdens-practica-te-bevorderen>

Marjo de Graauw – Universitair Docent – Bio-Farmaceutische Wetenschappen



Universiteit
Leiden
BFVW • BPS

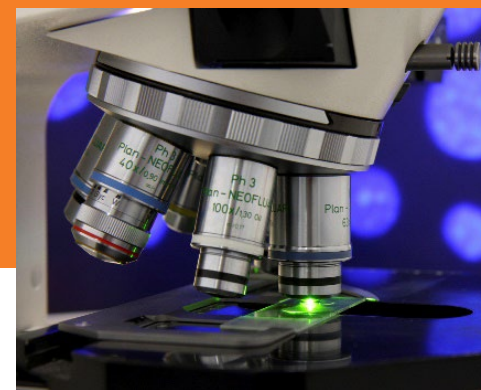
OOOgstfestival
23 januari 2025



Discover the world at Leiden University.

Bio-Pharmaceutical Sciences BSc and MSc

educating future drug researchers and specialists



Universiteit
Leiden

BFV • BPS



Discover the world at Leiden University.

Laboratory education is important in our curriculum

LabBuddy stimulates independence



Working in the laboratory is overwhelming

high cognitive load and anxiety levels



What if something goes wrong?

How do I solve a mistake?

Interactive videos as pre-lab activity

get to know your experiments digitally



Joining forces and expertise

SURF



&



**Universiteit
Leiden**
Faculty of Science



PRECURSOR MUSIC

Three types of videos were produced

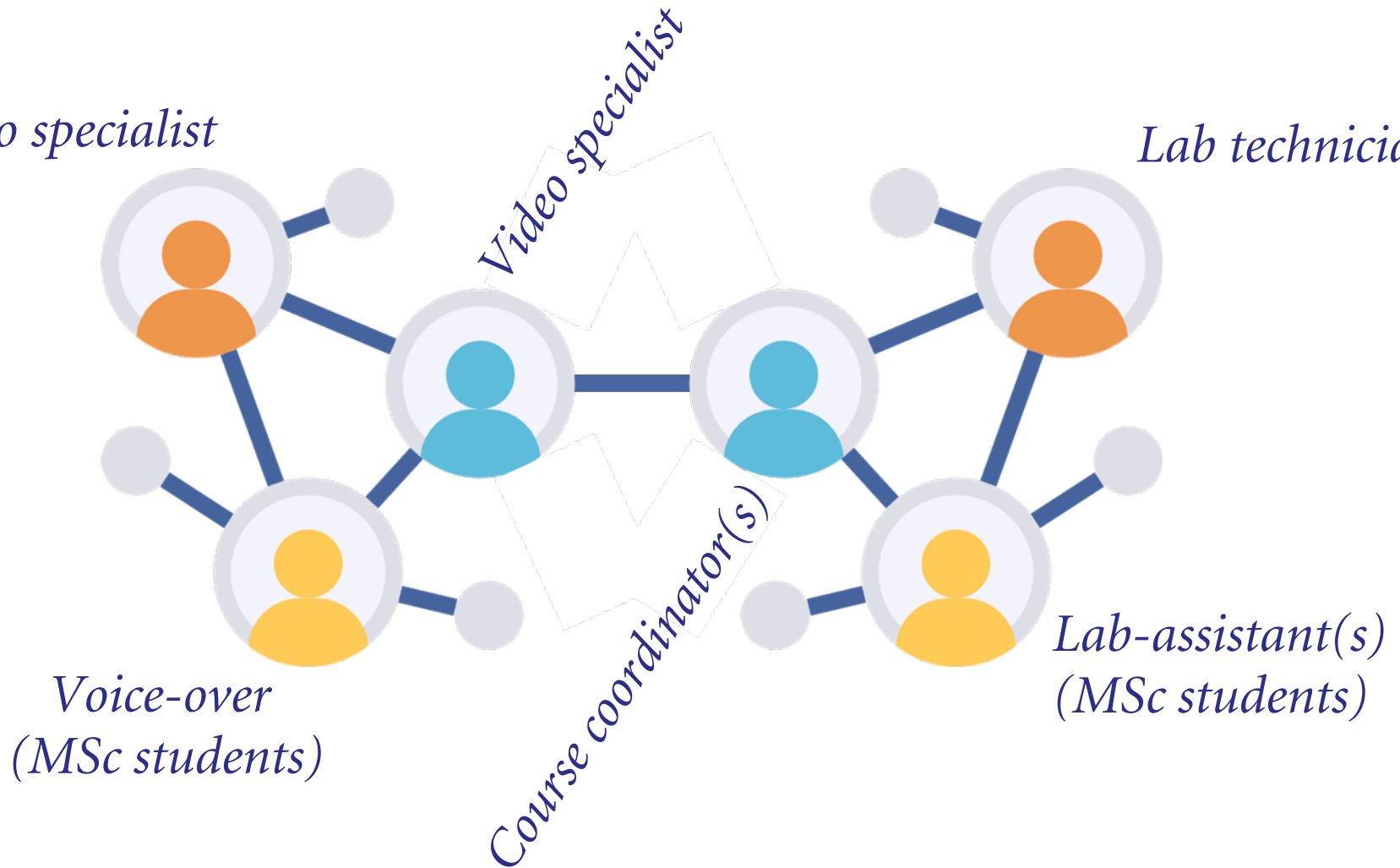
1. **Non-interactive videos** - introduce / demonstrate techniques.
2. **Linear videos with pop-up questions** - understand specifics of a method, technique or experimental workflow.
3. **Videolab (pilot)** – visually realistic, interactive, with branching storylines to practice an experiment.

Video creation process and team members

team with diverse expertise

Audio specialist

Lab technician



Video creation process and team members

collecting ideas for a script

Which mistakes do your students normally make in the lab?

Which questions do your students normally have?

Which scenarios could your students practice in advance?



Video creation process and team members

writing the scripts



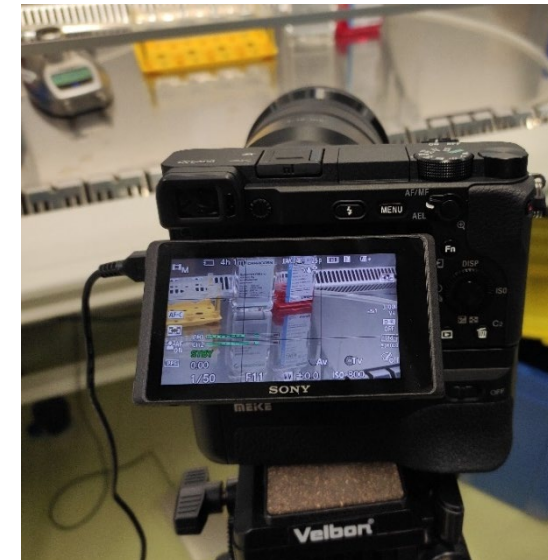
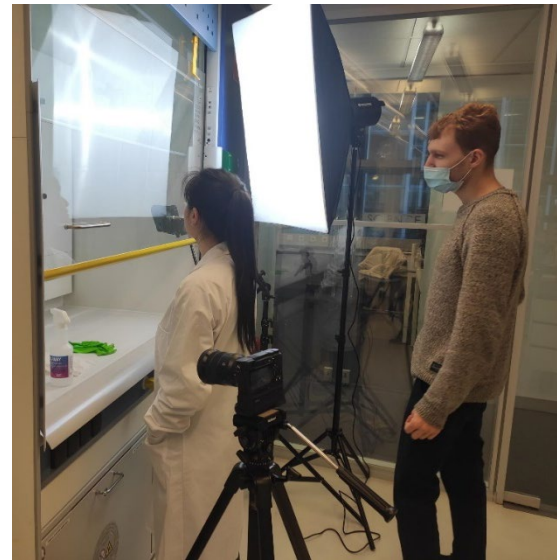
Fill in script template (a.o.)

- 1. Description of each shot.*
- 2. Description of different scenes to practice an experiment (videolab).*
- 3. Voice-over text for each shot.*

Video creation process and team members

filming all scenes without voice over

Filming from a student's perspective with multi-camera set-up

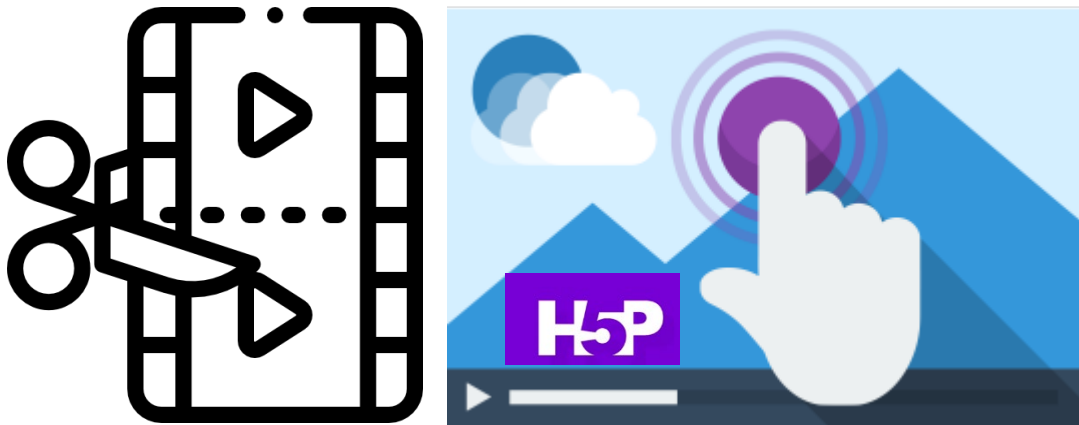


“Oh no....yesterday a left-handed student was our actor and today we are working with a right-handed student actor”

Video creation process and team members

editing and voice-over

Edit video and making it interactive



Amber Gerritsen - visual productions

Recording and editing voice-over and music



Quirijn Verhoog - precursor music

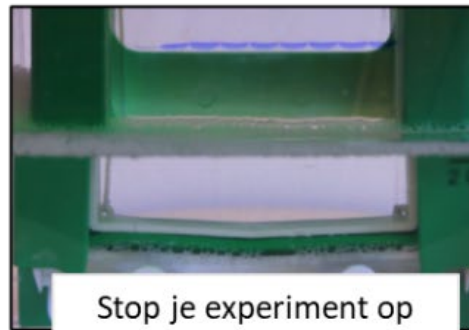
Interactive videos for a broad audience

building an open education resource for video

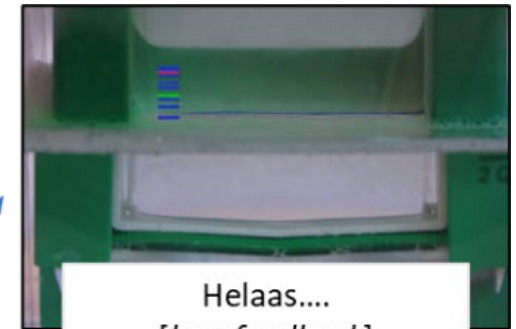
- ✓ No faces
- ✓ No logo's
- ✓ Open-source editing tool



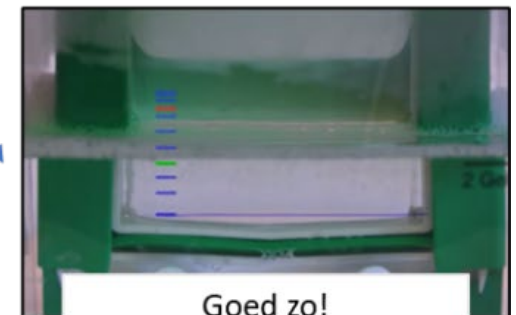
Start je experiment met de juiste instellingen.



Stop je experiment op het juiste moment.



Helaas...
[lees feedback]



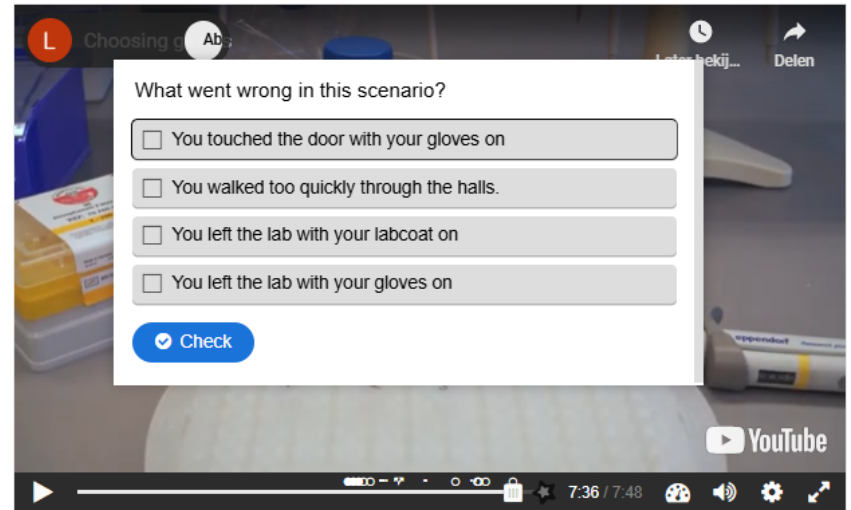
Goed zo!
[lees feedback]



Ready, take, action (and retake, retake, retake...)



boosts the educators team spirit



“Hey! Don’t run the hall with your gloves and lab coat on.”

Open-source video website and lessons learned

www.labprep.video



Boost your student's lab work with free interactive videos

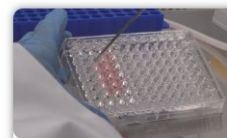
Are you a teacher that works with students in the lab? Here, you can find free videos to let your students practice relevant techniques and make their lab experience more worth-while.

Search Your Video

Categories ▾

Teacher guide

Interesting in making videos yourself? Consult our teacher guide!



Exposing cell culture



Liquid-liquid extraction



Protein detection

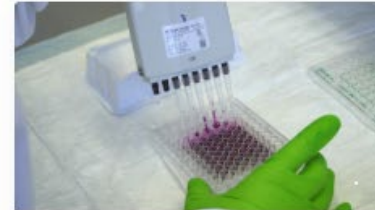




Choosing gloves



Using pipettes



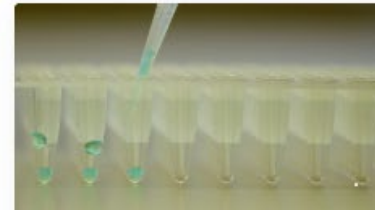
Cell fixation and SRB staining



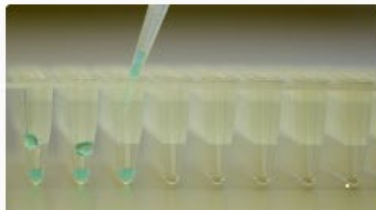
Cell plating and exposure



Western blot (interactive)



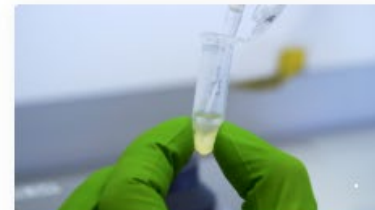
Reverse pipetting (for qPCR)



qPCR



cDNA synthesis



RNA isolation

Description



— Video download link

Non-interactive video [download link](#) (mp4).

+ Video script file

+ Protocol used in the lab

+ Questions (to test your students)

+ LabBuddy import file

Cell biology

Cell plating and exposure

This video shows how to plate cells and expose them to compounds.



 Skill level	Introduction video
 Category	Cell biology

Related videos



Cell plating and exposure



Cell counting



Cell culture – exposing cells



Cell suspension preparation (trypsin)

Evaluation – how did students use the videos?

Summary of the data presented during the symposium

> 85% watched the videos voluntarily

Students preferred a fully interactive video

Students felt better prepared, could work more independent and had lower stress levels.

What did we learn from the project?

- Lab education is improving when using interactive videos.
- Innovating together is a lot of fun and a great way to review, modernize and improve your (lab)course.
- Experts are needed to generate videos (in a sustainable way).
(thus definitely use our tips & tricks in our teacher guide!)
- Ensuring that many people can and want to use your materials is not easy.
(no existing platform for video sharing was available)
- Obtaining funding / support to extend this work is not easy.

It's time to boost your students' lab experience with interactive videos!

<https://www.labprep.video>

This project is sponsored by SURF

<https://www.surf.nl/interactieve-videoprotocollen-om-hogere-orde-leren-tijdens-practica-te-bevorderen>

Questions? Contact us at info@labprep.video



Universiteit
Leiden
BFV • BPS



Discover the world at Leiden University.