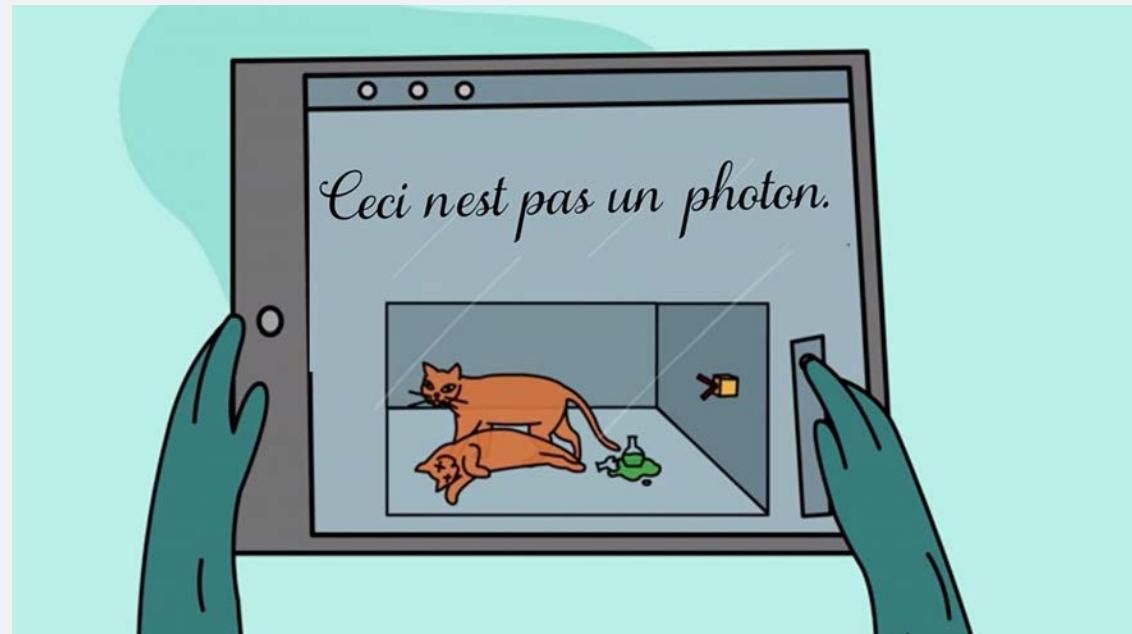


Audiovisuelle Bewegtbilder: Wissenschaftskommunikation

19.4.2023

Dr. Jeanine Reutemann
Lead LET EduMedia ETH



Übersicht von heute

- 1. Videos und andere visuelle Formate in der Wissenschaft**
- 2. Historischer Hintergrund Wissenschaftsvideos**
- 3. Audiovisuelle Wahrnehmung & AV-Rhetorik**
- 4. Meme-culture**
- 5. Praktisches Vorgehen und Tipps**
- 6. Weiterer Ablauf für die Produktion und Aufgabenklärung**



**Ecosystem Management in the
Scottish Highlands, ETH Zürich, 2017.**



**Inequality & Conflict, r4d programme SNF,
ETH Zürich, UNIL & Geneva Graduate Institute, 2019.**

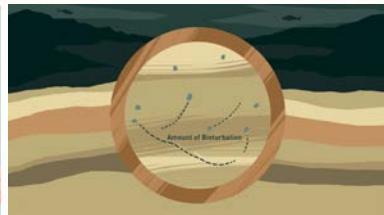


**Remote Sensing Method, Leiden
University, 2018.**



**Fairtrade Chocolate Ghana,
University Osnabrück, 2018.**





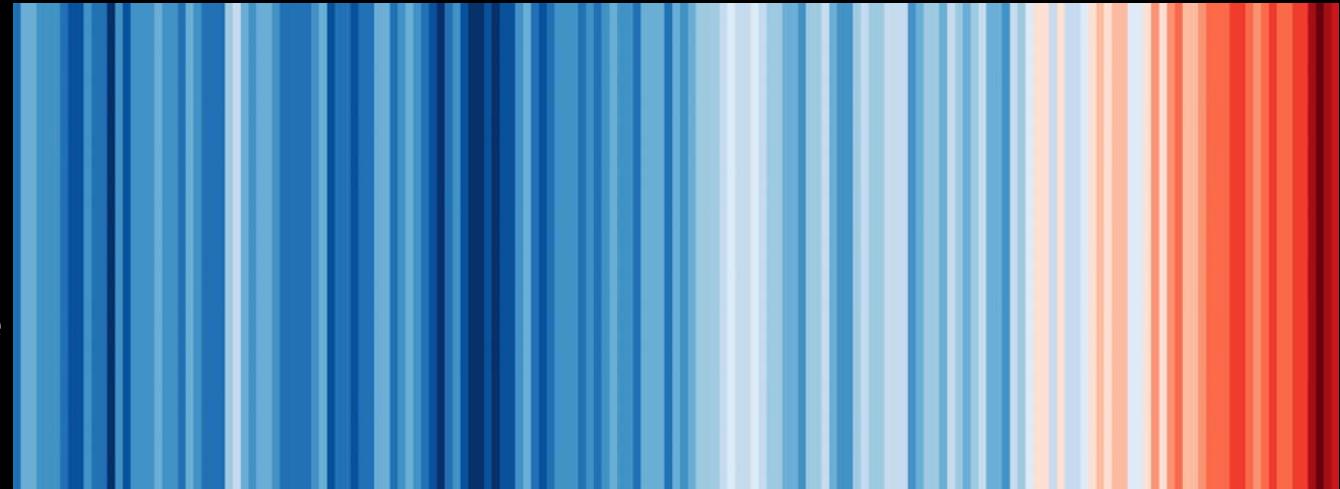
1. *Diskutiert zu zweit*
2. *3 min*
3. *Wenn Musik angeht, geht's weiter*

**Wenn ihr an die letzten Monate oder
auch Jahre zurückdenkt:
Welches Video hat bei euch eine
bleibende Erinnerung generiert?**

words and images

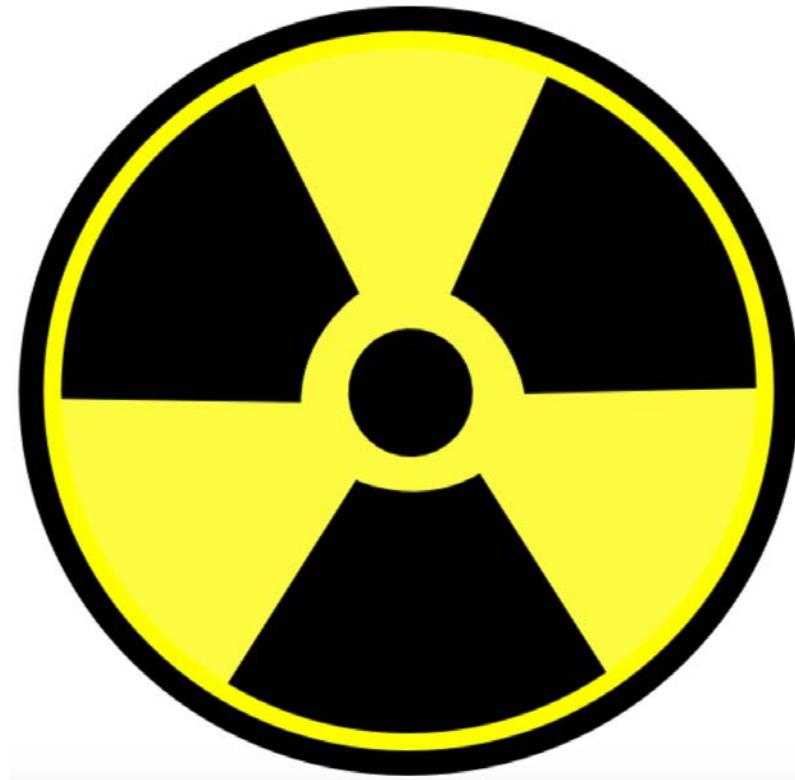
academic culture and the digital world

**«This graphic
explains everything
in the blink of an
eye [...] have a
magical effect on
our brain, (letting)
us recognize
connections before
we have even
actively thought
about them»**



«Warming stripes», Professor Ed Hawkins, 2016.

Schmid, Simon (2019).



"A not thankless task would be, for example, to record the shooting up of a forest mushroom or the turning of a sunflower during a day in a series of such photographs. The growth, etc., could be studied very nicely in this way."

TRANSLATED INTO ENGLISH, ORIGINAL IN GERMAN:
[LUDWIG MACH](#): UEBER DAS PRINCIP DER ZEITVERKÜRZUNG IN DER SERIENPHOTOGRAPHIE.

1893

«You had to be able to describe your science in words, or tables, or in plots, in two-dimensions on a piece of paper. [...] With videos, you can now describe dynamic phenomena which are simply too complicated, too complex, too unusual, too full of information to do in words and two-dimensional pictures'.

[GEORGE WHITESIDES](#) IN BERKOWITZ, JACOB. VIDEO ABSTRACTS, THE LATEST TREND IN SCIENTIFIC PUBLISHING. UNIVERSITY AFFAIRS.

2013

Videos = Audiovisuelle Bewegtbilder

Vgl. Fremdsprache lernen

1. Video ≠ Aufzeichnungsformat

**2. Videō (latin. videre: sehen,
wahrnehmen, erkennen)**

**3. Kamera ist ein
technoästhetisches Instrument
(Technologie & Ästhetik)**

«Film allows me to authentically disseminate my research like no written and spoken word or photograph could ever do, and it gives my work credibility and charisma.»

**Dr. Geraldine Werhahn, Himalayan Wolves Research,
Wildcru Unit, Oxford University.**



iconic or pictorial turn

what do images do?

**Fotografie, das
ist die Wahrheit.
Und Kino, das ist
die Wahrheit 24
Mal pro Sekunde.**

Jean-Luc Godard, *Der kleine Soldat*, 1960.

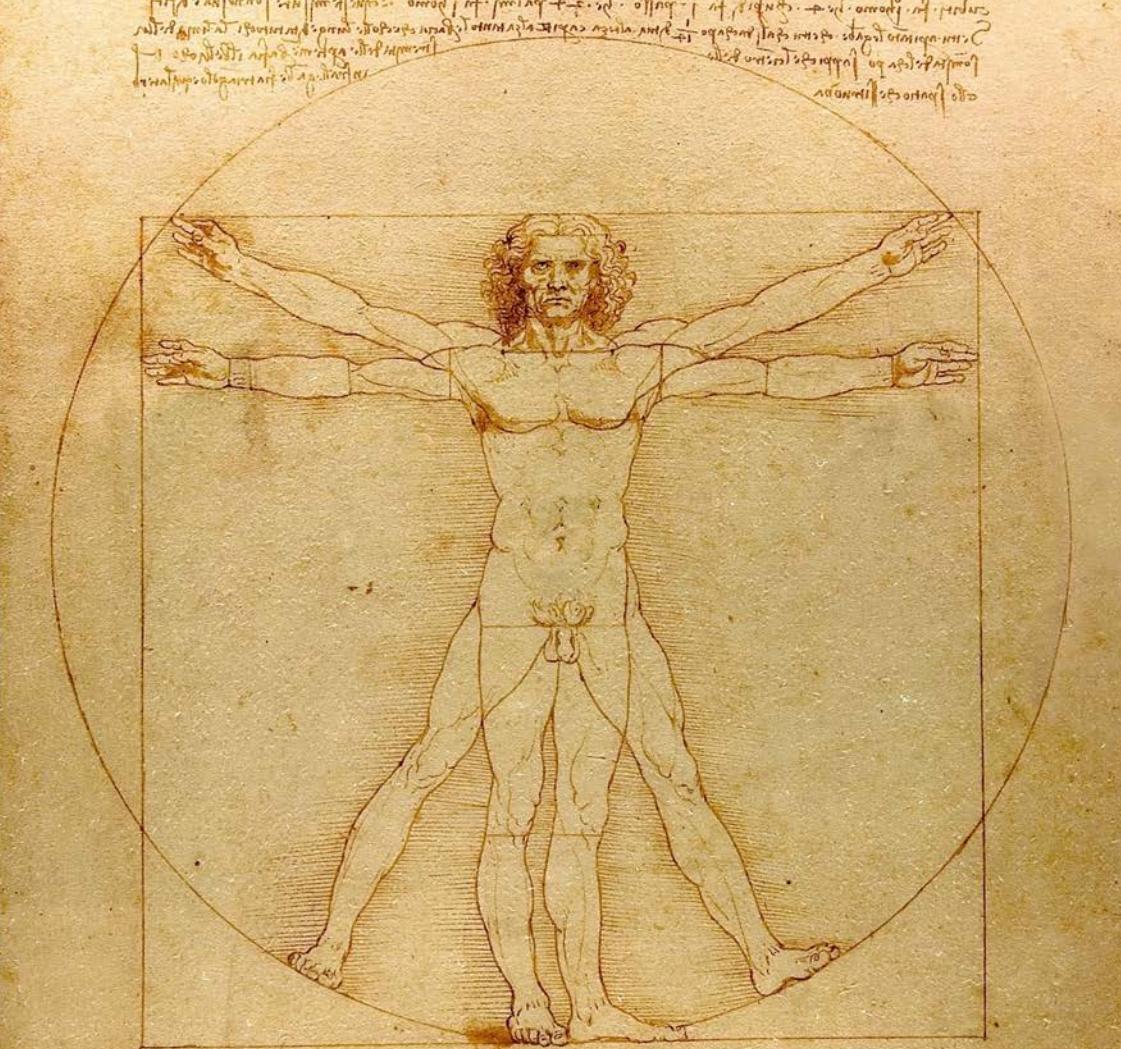


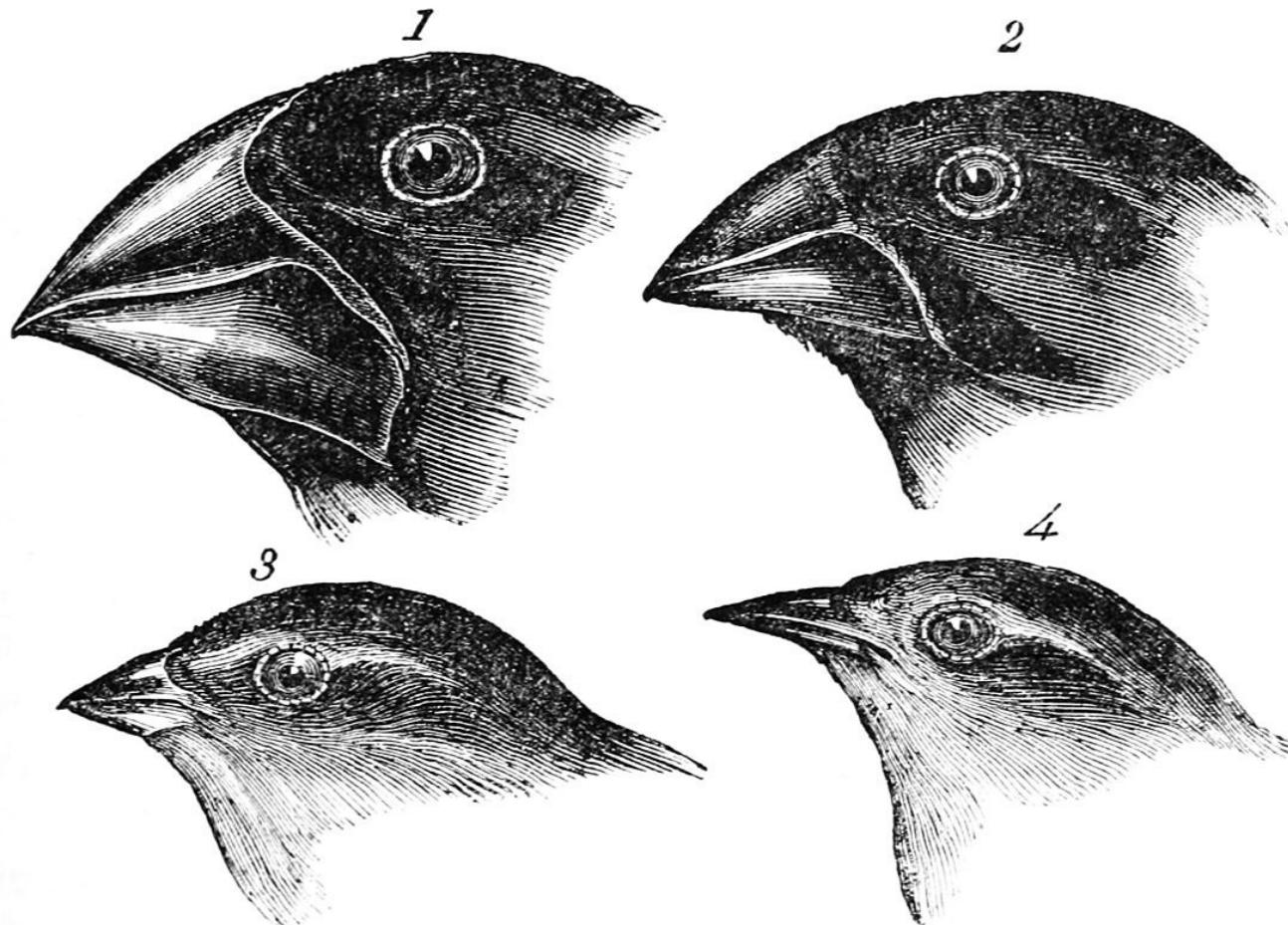
Buster Keaton, *The Goat*, 1921.

David Attenborough:

«We were able, for instance, to put together views of living amphibians which no one had been able to see in that range of time ever. No zoo could show you that amount. The visual effect was devastating.»

Nicholas Whapshott: »The perfect teacher, back with animals», in: **The Times** vom 1. März 1980: 14., cited in: Jean-Bapiste Gouyon: »Science and film-making», in: **Public Understanding of Science** 25.1, 2016: 33.





1. *Geospiza magnirostris.*
3. *Geospiza parvula.*

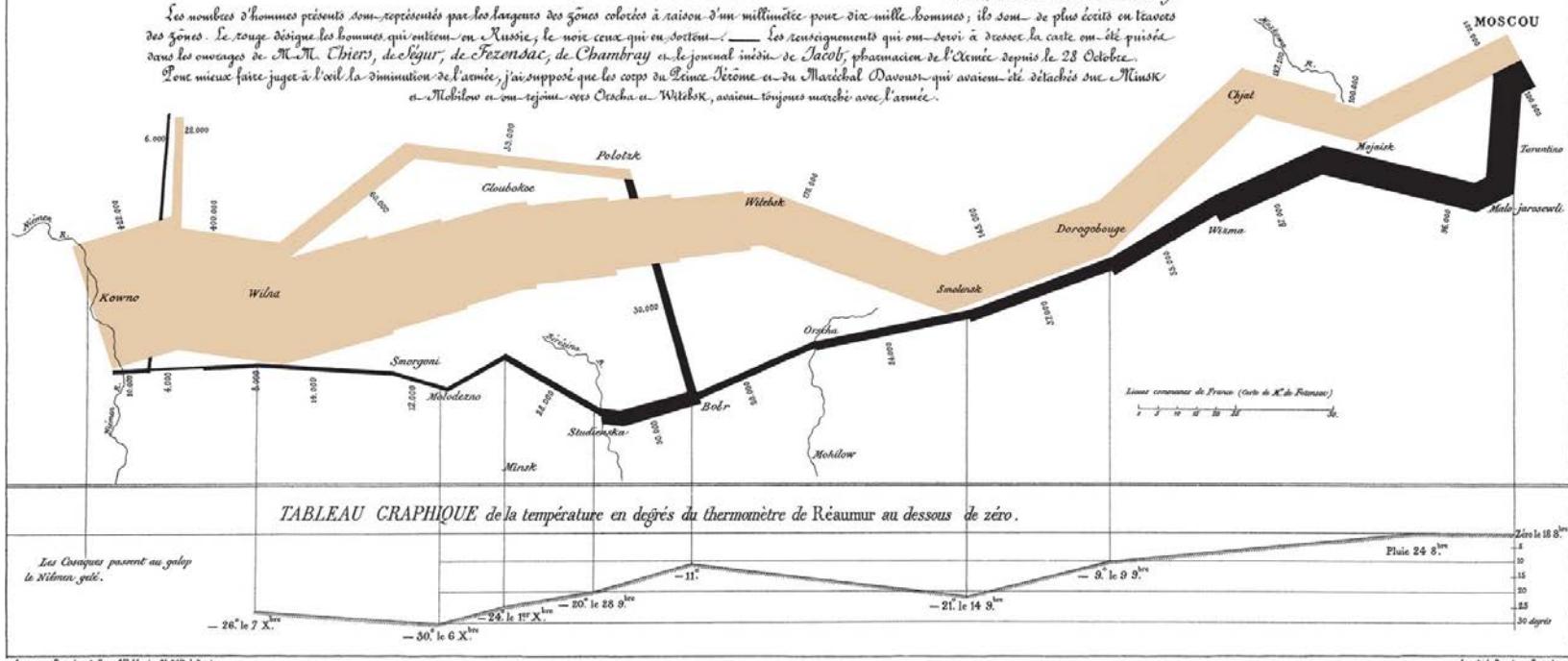
2. *Geospiza fortis.*
4. *Certhidea olivacea.*

Carte Figurative des pertes successives en hommes de l'Armée Française dans la campagne de Russie 1812-1813.

Écrite par M. Minard, Inspecteur Général des Ponts et Chaussées en retraite Paris, le 20 Novembre 1869.

Les nombres d'hommes présents sont représentés par les larges des zones colorées à raison d'un millionième pour dix mille hommes; ils sont de plus écrits en lettres dans les ouvrages de M. M. Chiers, de Clémier, de Fezensac, de Chambray et le journal intitulé de Jacob, pharmacien de l'Armée depuis le 28 Octobre.

Pour mieux faire juger à l'œil la diminution de l'armée, j'ai supposé que les corps du Génie, Véronique et du Maréchal Davout, qui avaient été détachés sur Minsk et Malibow en route vers Ossouïa et Witebsk, avaient toujours marché avec l'armée.



Minard's 1869 diagram of Napoleonic France's invasion of Russia, early example of an information graphic

ANIMAL LOCOMOTION.

AN ELECTRO-PHOTOGRAPHIC INVESTIGATION OF CONSECUTIVE PHASES OF ANIMAL MOVEMENTS.

1872—1885.

BY
EADWEARD MUYBRIDGE.

PUBLISHED UNDER THE AUSPICES OF THE

UNIVERSITY OF PENNSYLVANIA.

PLATES.—VOL. I.

MALES (NUDE).

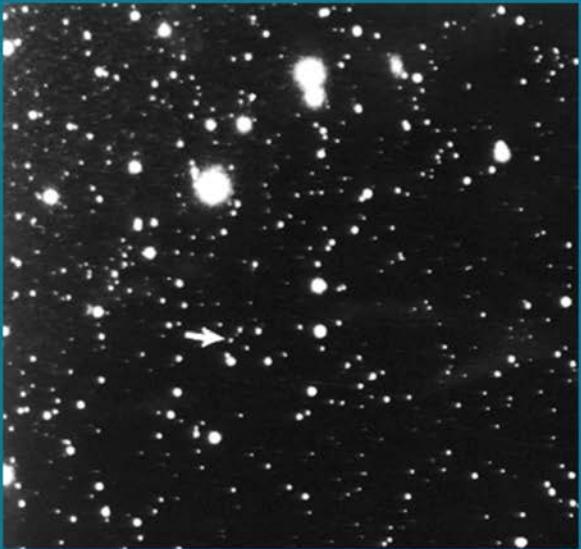
THE PLATES PRINTED BY THE PHOTO-GRAVURE COMPANY.

PHILADELPHIA:

1887.



Muybridge's electro-photographic investigation of consecutive phases of animal movements, 1872-1885.



1930



1994



2015

Left: Discovery of Pluto, 1930. Lowell Observatory Archives; Middle: Faint Object Camera, Hubble Space Telescope, 1994. Nase/ESA/A. Stern and M. Buie. Right: New Horizons, 2015. NASA/Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute/Alex Parker.

History of Science Videos

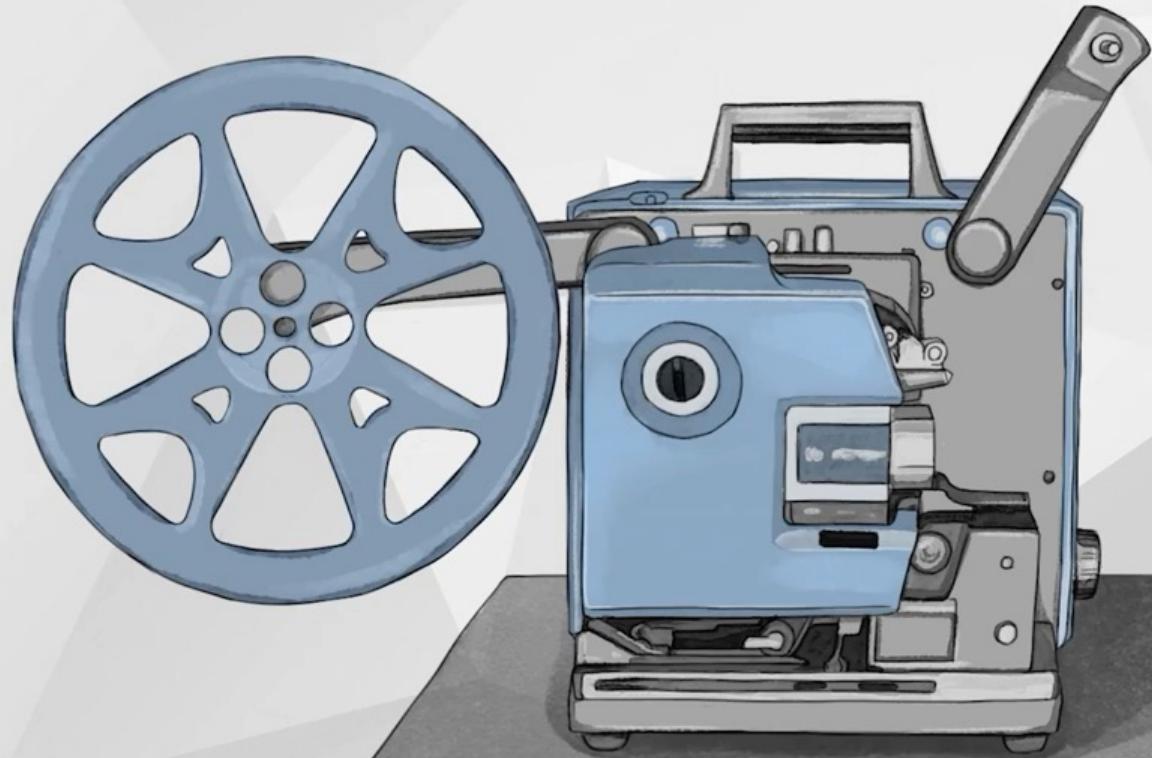
"Unter Wissenschaftsfilm versteht man Filme, die im Dienst der Wissenschaft und Forschung stehen. [...] Forschung, Dokumentation, Unterstützung der Lehre und Popularisierung des Wissens sind die wichtigsten Funktionen des Wissenschaftsfilms. Heute werden Wissenschaftsfilme meist auf Video produziert."

<http://filmlexikon.uni-kiel.de/index.php?action=lexikon&tag=det&id=389>

History of Science Videos

Wann wurde der Wissenschaftsfilm von Jean Painlevé als ein eigenes Genre definiert?

- 1. 1910er Jahre**
- 2. 1930er Jahre**
- 3. 1950er Jahre**



1. *Diskutiert erneut zu zweit*
2. *3 min*
3. *Wenn Musik angeht, geht's weiter*

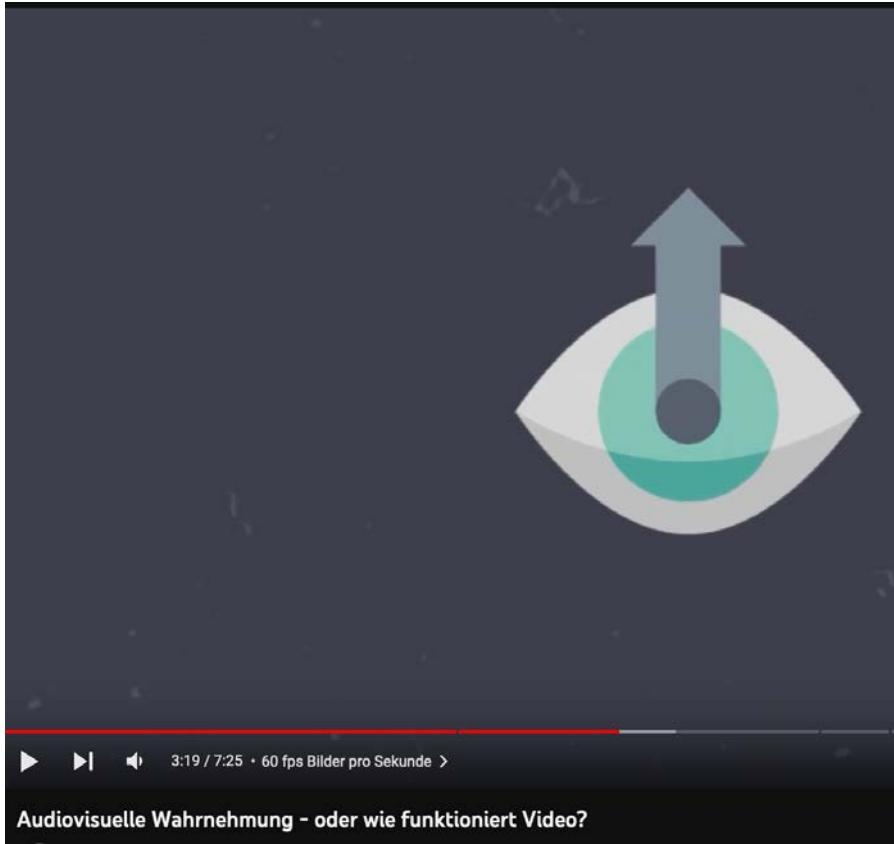
**Was sind die wichtigsten visuellen
Elemente welche euch aus eurem
Studium bislang geblieben sind?
(Icons, Gifs, Fotos, Videos, Diagramme)**

cold data, warm data

The screenshot shows a news article from The Guardian. The headline reads "Hundreds dead as more religious violence hits Nigeria". Below the headline, there is a sub-headline: "Officials say more than 500 could have died in clashes between Islamic extremists and Christian villagers". The article includes a photograph of a damaged building and a map titled "Map 1: Boko Haram and ISIS Attacks". The map shows several locations in Nigeria and surrounding countries, with red dots indicating areas of conflict.



Break



▶ ▶| 🔍 3:19 / 7:25 • 60 fps Bilder pro Sekunde >

Audiovisuelle Wahrnehmung - oder wie funktioniert Video?

Wissenschaftliche Daten, Texte, Konzepte > Video

- ... Wissensvermittlung**
- ... Wissenskommunikation**
- ... Wissenstransfer**
- ... Wissenstranslation**
- ... Wissenstransformation**

Humor in Wissenschaftsvideos?

- **motivationspsychologische, kognitive und soziale Ebene**
- **Aufmerksamkeit steigern, lernförderliche Emotionen zum Thema entwickeln, kognitive Distanz zum eigenen Denken erlangen**
- **Lachen verbindet – auch digital und in asynchronen Formaten! (parasoziale Beziehungen)**

vgl. u.a.

Kassner Dieter, Humor im Unterricht. Bedeutung – Einfluss – Wirkungen. Können schulische Leistungen und berufliche Qualifikationen durch pädagogischen Humor verbessert werden? Baltmannsweiler 2002;
Wanzer Melissa Beklja, Frymier Ann Bainbridge, Wojtaszczyk Ann M., Smith Tony, "Appropriate and Inappropriate Uses of Humor by Teachers", in: Communication Education 55:2, (Februar 2007), 178–196;
Neumann Jennifer, Stachelscheid Karin, Dickhäuser Andreas, «Humorforschung und Unterricht. Theorien – Modelle – Unterrichtsforschung», in: Der mathematische und naturwissenschaftliche Unterricht, 66:8 (Neuss 2013), 497–501; Wirth, Uwe, Komik. Ein interdisziplinäres Handbuch. Stuttgart 2017;
Wicki Werner, «Angebrachter und unangebrachter Humor von Lehrerinnen und Lehrern – Zusammenhänge mit der Lehrer-Schüler-Beziehung und mit der Lern- und Leistungsmotivation», in: Schärer Hans-Rudolf, Zutavern Michael (Hg.), Das professionelle Ethos von Lehrerinnen und Lehrern. Perspektiven und Anwendungen, Münster 2018, 135–149.

Neue ETH Publikation: Reutemann J., Volk B. & Rehmann J.: **Humor im Wissenschaftsfilm**, in: CINEMA #68: Humor.

meme culture

Meme

/mēm/

(n.) A humorous image, video, piece of text, etc., that is copied (often with slight variations) and spread rapidly by Internet users.

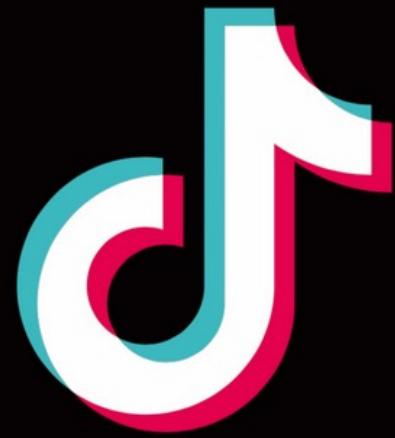
Begriff kommt von Richard Dawkins, erste Ausarbeitung war von Blackmore Susan (2000). The Meme Machine. Oxford University Press.

meme culture and sciences

Visuelle Referenzen

- Kontextualisierung!
- Kunst, gesellschaft, kultur, politik
- Warum ist es wichtig für das Individuum?





TikTok

meme culture

TikTok

Suchen

+ Hochladen Anmelden

Für dich

Folge ich

LIVE

Melde dich an, um Erstellern zu folgen, Videos Likes zu geben und Kommentare anzuzerlegen.

Anmelden

Entdecken

eidmubarak

ramadan2023

eurovision2023

Original sound

hey

4.4M Videos

she looked so good #fyp ...

I am OBSESSED with that ...

This is how I'm gonna dan...

I don't need your help, Thi...

Original

n0gitsxne

nianaguerro

heyitsbessma

ringodanyan



meme culture and sciences

TikTok

Suchen

+ Hochladen Anmelden

Für dich

Folge ich

LIVE

Melde dich an, um Erstellern zu folgen, Videos Likes zu geben und Kommentare anzuzeigen.

Anmelden

Entdecken

eidmubarak

ramadan2023

eurovision2023

🎵 BALLADE - Loredana

🎵 You're My Heart, You're ...

original sound

Ali Campbell ✅
199K Videos

My friend planning an entire Europe trip and knowing exactly where to go

gregorosaurus

God bless you andrew.

"Quit driving like that you're scaring your Gf"

when someone does something cringe and you go to the comment

my mom and aunt: "take care of your baby cousin"

colleenalexist11

you mess with me, you me...

It's funny because it's true...

Me planning our entire vacation to the last detail, researching for flights, hotels, things to do, places to eat...

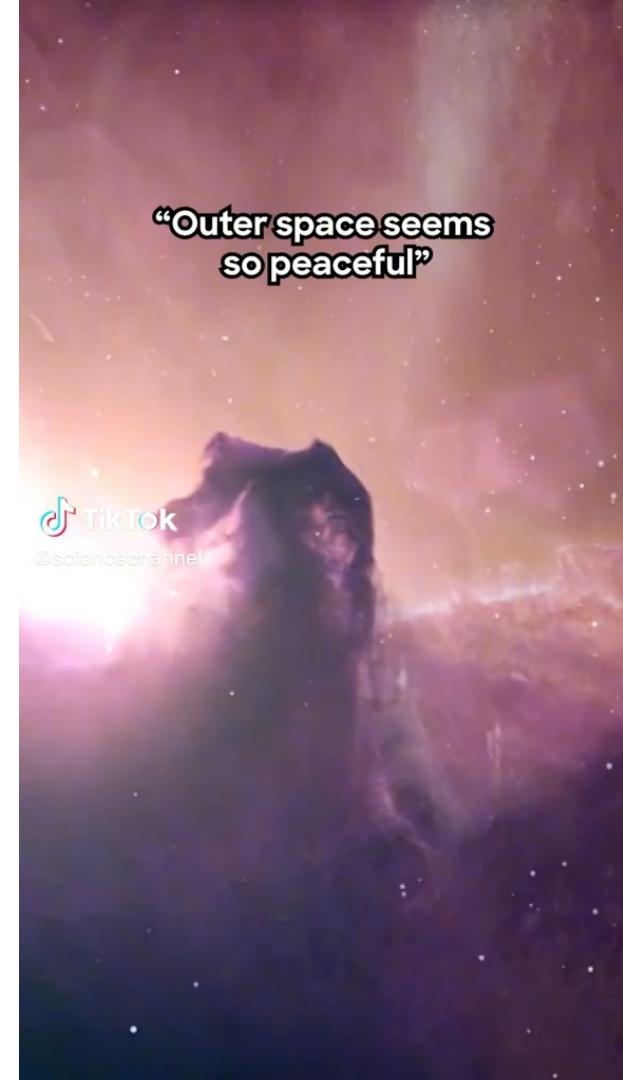
urban_runner_den...

It's funny because it's true...

annaxsitar

who's ready to see the dr...

App holen



Video Aufgabe

Ziel: Kurzvideo/s über eure wissenschaftliche Themen

Länge: shortest-shorts, Orientierung an tiktok Längen:

- 5-11 seconds
- 27-33 seconds
- 1-3 minutes

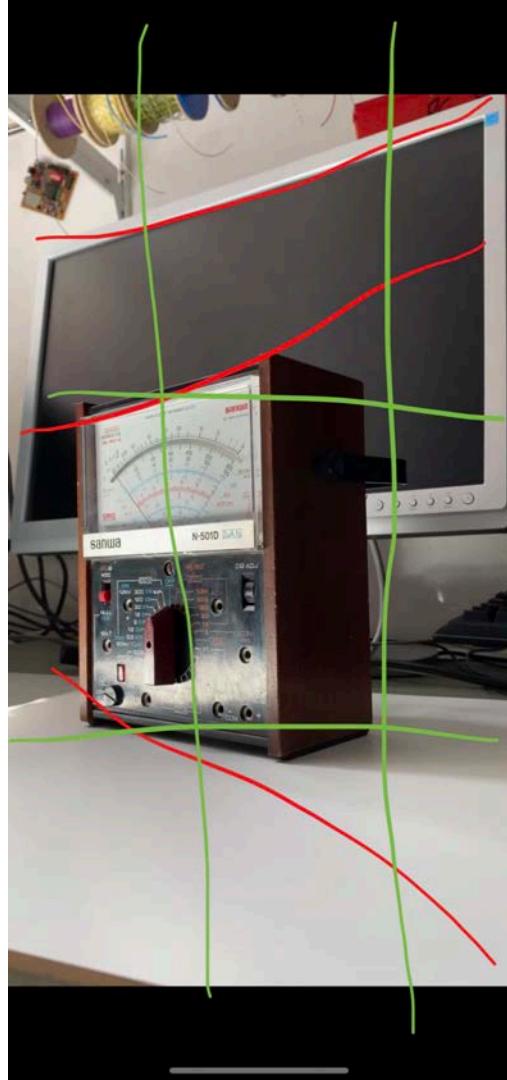
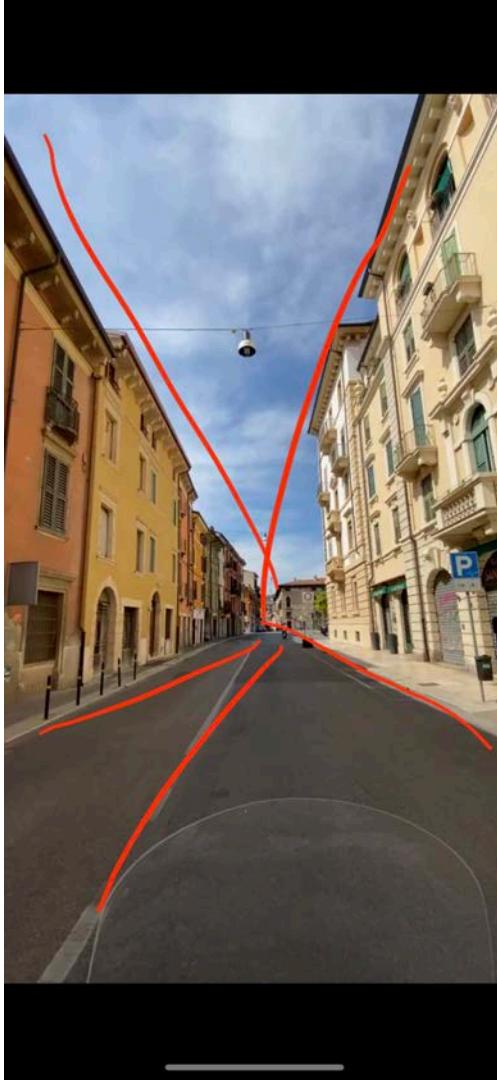
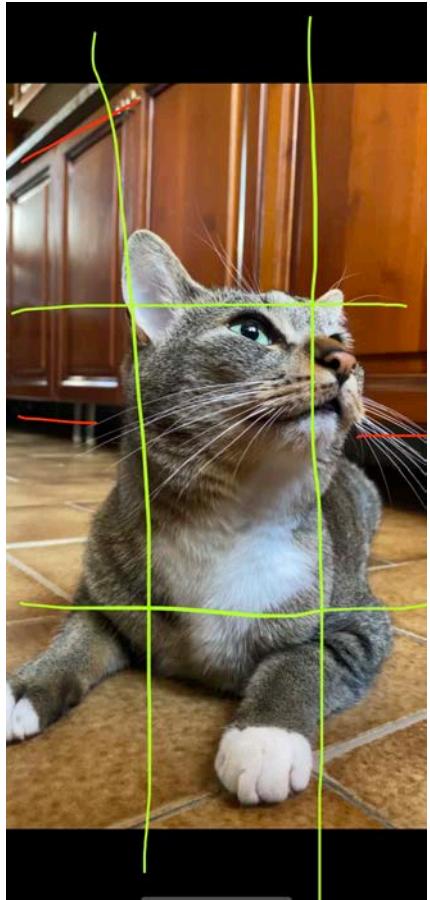
Zielpublikum: Definieren des gewünschten Zielpublikums

Format: Einzelvideo oder serielles Format (einzelne Teilvideos zum Thema)

Style: Live-footage, Animationen, Stop-motion, Sichtbare Sprecher, Dokumentarisch, Re-Inszenierung - was immer euch interessiert, worin ihr Skills erlangen möchten und was zu eurem Inhalt und Team passt.

Practical intermezzo

Composition



Camera angles, can change the meaning of a shot

1. Eye level shot

2. The low angle shot

Low angle camera shots are a perfect camera angle for signaling superiority.

3. In a high angle shot

The camera points down at your subject. It usually creates a feeling of inferiority, or “looking down” on your subject.



Common beginner's mistakes

- **Shaky video**
- **Holding the smartphone in a wrong way**
- **Too dark/too light**
- **Poor composition**
- **Bad audio**





Basic grip

Have both of your hands crossed, place them closer to the bottom of the phone. Keep your elbows close to the torso, otherwise your shot will be shaky, not stabilized.



Second grip

**Have your phone with
a right hand, with
thumb of the left hand
push the upper right
corner of the phone
counter clockwise.
Feel the tension
that creates when
you “screw” your
device.**



Third grip

The lazy grip ☺

Have your phone
with the right hand,
put then on the left to
add stability and
move control.





Backlit - (bad) in front of a window turns you into a silhouette. You're almost invisible.



Head protrusion - (bad) I have a lamp projecting out of my head. Distracting, isn't it?



Below light - (bad) looks exaggerated, and even creepy. Too much light.



Natural - (good) standing facing window for natural lighting.
Camera level is same with eye level.



Outdoor light in a shadow of trees/buildings – (good), if you're shooting when the sun is in its zenith, then find a place in a shadow.



The face directly to the sun – (not bad)
BUT better to avoid sharp shadows, and
I am finding the sun in my eyes quite
distracting.

1. What's already out there

Audiovisuelle Recherche in dein Themenfeld

**Wenn möglich, kreiere einen tiktok Account
und lass dich inspirieren von der Formatvielfalt.**



2. Inquire “videos”

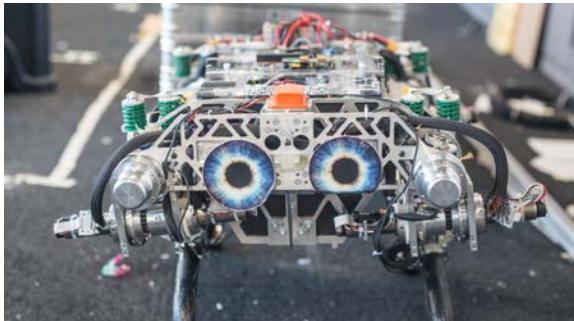
- Analysiere und beobachte exakt wie die Videos Geschichten erzählen, argumentieren, audio-visuell kommunizieren.
- Was für Bilder werden wann und wie eingesetzt?

The renowned mathematician Benoît Mandelbrot was once asked what had led to his great success. Mandelbrot responded: “When I seek, I look, look, look, and play with pictures. One look at a picture is like one reading on a scientific instrument. One is never enough.”

Mandelbrot, The Fractalist, 2014

3. Practice practice practice

Produziere visuelles Material im Studiumsalltag.

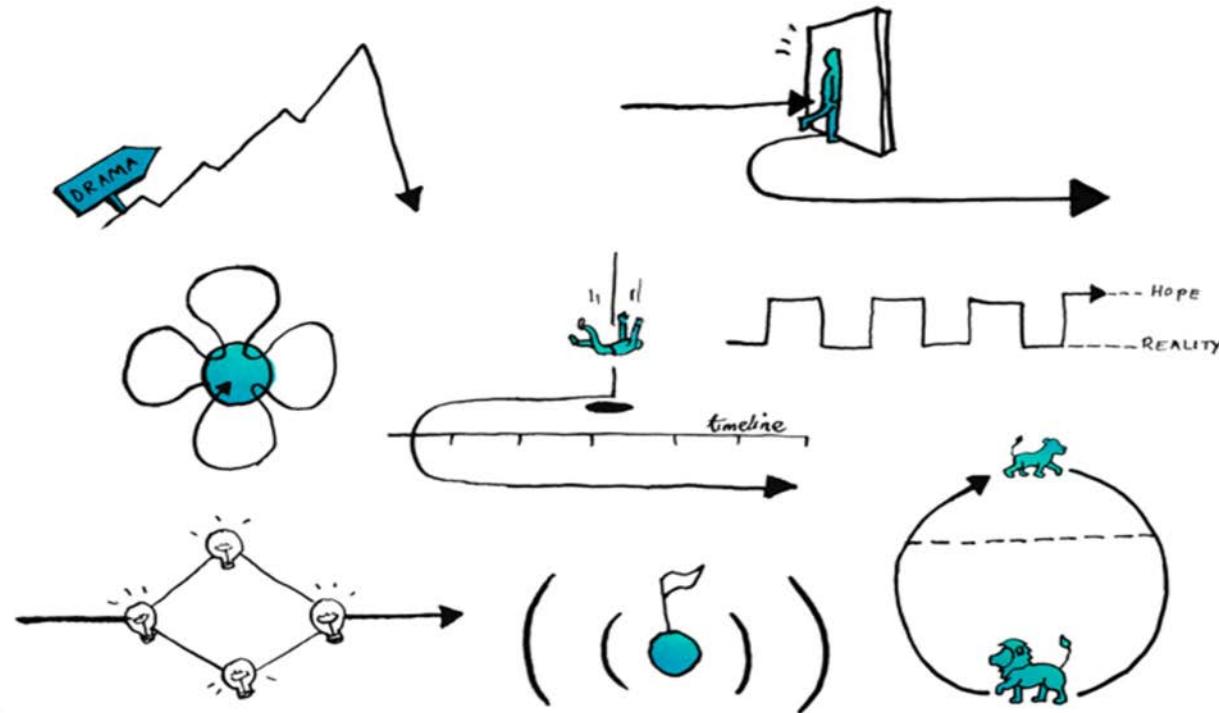


4. Tell more stories – storytelling



Narration, Rhythmus

(Video ist das Zeitmedium per se)





**SHOW,
DON'T TELL**

Wichtig für deine Videoproduktion

1. Script schreiben und Storyboard Notizen:

- > Show, don't tell: Welche Aspekte sind visuell?**
- > Gibt es Möglichkeiten für Erkenntnisse durch Visualisierung?**

2. Erstelle einen kleinen Produktionsplan

- > Wann filme ich wo, was. Raumbuchung? Personen? Deadlines?**

3. Kill your darlings: Kürzen kürzen kürzen.

4. Basic understanding of the film process

- > Videos produzieren funktioniert anders als Texte schreiben.**

Videoprojekt Auftrag

Vorbereitung für den Workshop am 26.4.

Arbeitstitel:

Synopsis:

Zielgruppe:

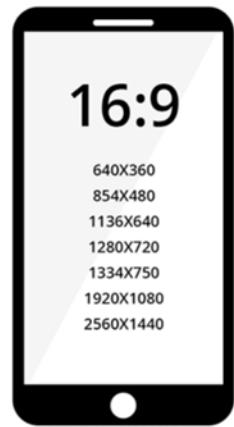
Geplante Länge:

Format (z.B. Animation, Musikvideo, Stop-Motion, sichtbarer Sprecher, inszenierter doku, interview, memes, tiktok challenge, kurze Serie...):

Zeit (sek)	Visuelles Ebene: <u>was sieht man wie?</u> (Animation, Person, Objekt)	Sound: Sprache (sichtbare Sprecher, <u>voice-over</u>); Sound Design, Musik	Script: <u>Szenenbeschreibung mit</u> wissenschaftlichem Kontext	Notizen



PIXEL 2, SAMSUNG GALAXY NOTE 8, LG V30

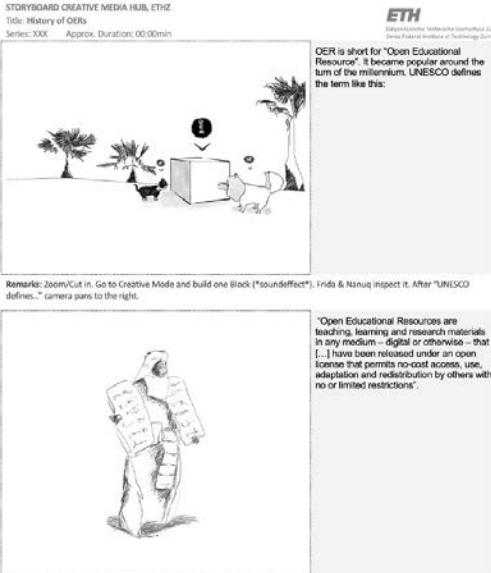
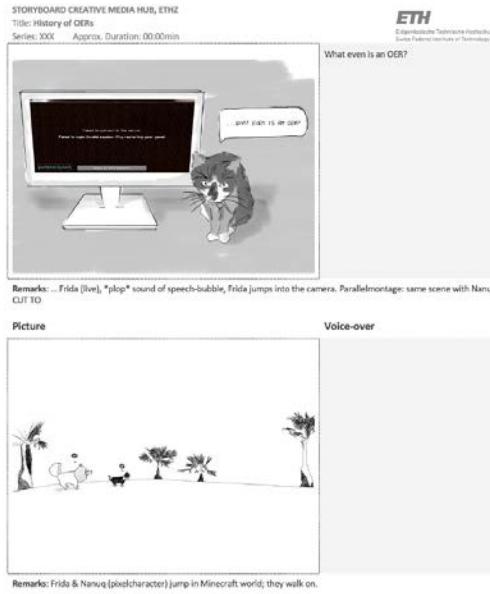


IPHONE 8, 7 PLUS, 7S, 7, 6 PLUS, 6S, 6, AND 5,
SAMSUNG GALAXY S7, S5, AND S3, GOOGLE
NEXUS 5

A Short History of Open Educational Resources

Narrative	Reference	Visual	Effects
“Wide open” wind sounds		Already in the Minecraft landscape, have a large “Open Educational Resource” in block letters standing around like so: https://m.media-amazon.com/images/I/51GY07RV2YL.jpg	Fly in with camera Single Shot?
The term “Open Educational Resource” became popular around the turn of the millennium. UNESCO defines it like this:	Johnstone, Sally M. "Open educational resources serve the world." <i>Educause Quarterly</i> 28.3 (2005): 15.		Move over to some sign, stone tablet or scroll in the landscape with the following text.
<i>Read the text ... maybe have some audible breath in the middle and seem a little impatient.</i>	https://en.unesco.org/themes/building-knowledge-societies/oer	Open Educational Resources (OER) are teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions.	Highlight phrases as we talk about them or move with camera over the text, or scroll the scroll.
What this means: Open Educational Resources, or OERs for short, are actually older than the term.		Clock with hands (in <u>Minecraft</u> ?) running backwards and/or <u>Minecraft</u> landscape turning black and white.	Camera turning to clock

Hello and welcome to a short history of OERs. Wait, what even is an OER? OER is short for “Open Educational Resource”. It became popular around the turn of the millennium. UNESCO defines the term like this (Johnstone 2005: 15): “Open Educational Resources are teaching, learning and research materials in any medium – digital or otherwise – that [...] have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions”.¹



Videoprojekt Ablauf

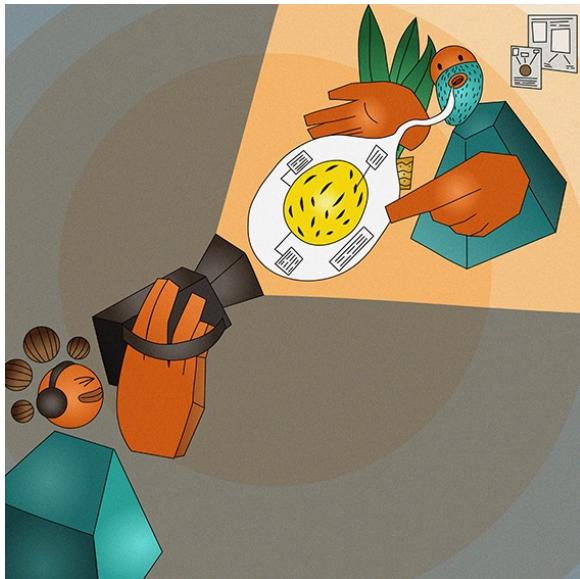
Preproduction



Workshop
26.4.23

Videoprojekt Ablauf

Production



Between 26.4. – 15.5.2023

Videoprojekt Ablauf

Postproduction



*Roughcut review with us:
week of the 15th May*

Final Screening

31th of May



*See you all in the
workshop on the 26.4.23*

