

Educational Videos & AI Multimedia

Guest Speaker at Course

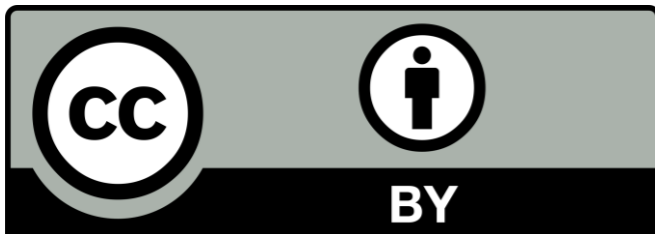
“Educational Technology for Strong Schools” at Asian University for Women (AUW)

Benedikt Brünner | 2024-10-23

Slides and Licence

Slides available at <https://doi.org/10.3217/5qr79-hh894>

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ed-tech.at

Outline

1. introduction: Graz University of Technology
2. generative AI in educational videos
3. current research: AI avatars

Graz University of Technology

- Austria, located in the heart of Europe
- diverse array of engineering and scientific programmes
- organizational unit **Educational Technology**
- *We care about eEducation*



TU Graz Campus Alte Technik, Imagesource: www.markus-kaiser.at


Generative AI in Educational Videos

Creating Learning Videos


canvas for collecting ideas

Learning Video Canvas

COLLECTION OF IDEAS FOR THE LEARNING VIDEO



Title of the learning video

TARGET GROUP 

Who will/should learn with the video?

Prior knowledge

What can be expected?
What can you build on?

Setting

How will people learn with the video?

Special requirements, e.g. subtitles,
simple language, translation

How is the target group addressed?
"Ladies and Gentlemen..."
"Hey, you!"

LEARNING GOAL

What should viewers know/be able to do/have done after watching the video?

What needs to be shown?

Question / problem / motivation


What is being explained and why?

What needs to be said?

What needs to be visualized?

What needs to be written/
shown as a text?

What needs to be repeated?

IDEAS FOR IMPLEMENTATION 

Ideas for the story (on the back)

PRODUCTION AND SCHEDULE

Resources

1. Staff <input type="checkbox"/> Expert <input type="checkbox"/> Camera person <input type="checkbox"/> _____ <input type="checkbox"/> _____	2. Equipment <input type="checkbox"/> Camera <input type="checkbox"/> Laptop <input type="checkbox"/> _____ <input type="checkbox"/> _____	3. Places <input type="checkbox"/> Studio <input type="checkbox"/> Field <input type="checkbox"/> _____ <input type="checkbox"/> _____
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Schedule


From _____ to _____
Pre-production (planning, script)

From _____ to _____
Production (recording, audio, video, screencast)

From _____ to _____
Post-production (cutting, finalizing, export)

PUBLICATION

Planned date of publication: _____

Place of publication:  _____

License:
 CC BY 4.0 _____
 CC BY-SA 4.0 _____

TO BE CLARIFIED

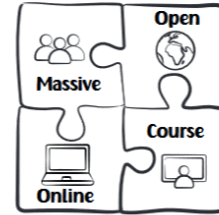
CC BY 4.0 iMooX.at, version 04/2021, <https://creativecommons.org/licenses/by/4.0>

iMooX.at/page/creator?lang=en CC BY 4.0 iMooX.at

7 Using Learning Videos

Massive Open Online Courses

MOOCs & Teaching



How to incorporate a MOOC into my teaching?

A MOOC (Massive Open Online Course) can be incorporated into various learning scenarios, e.g. as the online phase in a flipped classroom concept, to help participants reach a common level of knowledge at the beginning of a course or to deepen their understanding of certain topics.

Get inspired by the ideas on the back!



You can find many MOOCs for teaching purposes on **iMooX.at** – **free of charge** and as **OER** (Open Educational Resource). This means that you can use all content on iMooX.at for teaching and are often even allowed to edit it.

Create an individual curriculum: You are free to use only part of a MOOC in your teaching, or even combine parts from different MOOCs. Thanks to open licences, anything is possible.

Combine platforms: In all eight scenarios, you can also use a learning management system to provide participants with assignments, additional files or quizzes.

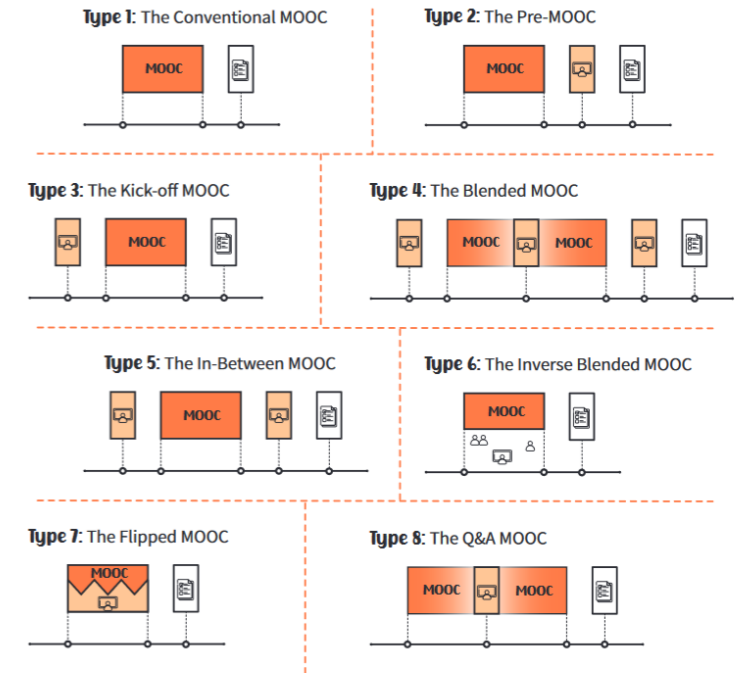
Make purposeful use of virtual formats: In all eight scenarios, the attendance phase can also be held as virtual attendance via video conferencing, e.g. if the participants are not in the same location.

If you have any questions about using MOOCs, contact us at office@imoox.at

Graz University of Technology/Educational Technology, Printservice TU Graz, Graz 2024

Eight teaching and learning scenarios with MOOCs

MOOC Massive Open Online Course **Attendance** virtual / on-site **Test Exam**
self-organised study groups



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<https://dx.doi.org/10.3217/tqf22-21458> CC BY 4.0 TU Graz Educational Technology

Generative AI in Educational Videos

- Storyboard
- Assets
- Audio
- Video

Storyboard Generation

Storyboard Prompt for Educational Video

Title: Understanding the Water Cycle

Objective: To educate viewers on the stages of the water cycle, including evaporation, condensation, precipitation, and collection.

Target Audience: Middle school students (ages 11-14)

Duration: 5 minutes



Screenshot chatgpt.com

Storyboard Translation

[Start free trial](#)[Menu](#)

Translate whole documents

Save time and effort by translating an entire document with one click.

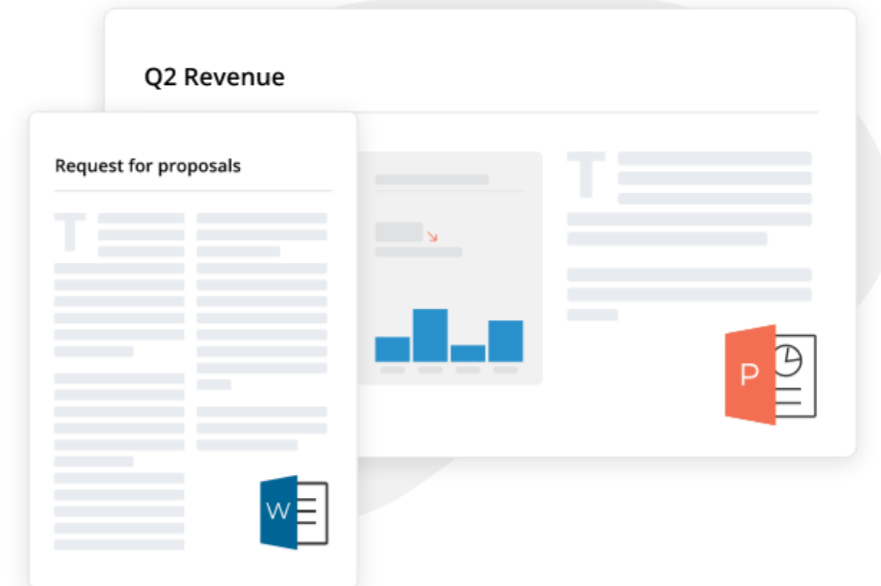
Translate PDF, Word, and PowerPoint files

All translated documents maintain their original formatting. With DeepL Pro, you can also edit translated documents, as well as [translate larger files and more file types](#).

FEATURE INCLUDED IN

ALL PLANS

[Compare plans](#) →



Screenshot deepl.com

Storyboard to Video



What Video Will You Create Today?



Script To Video In Just Minutes

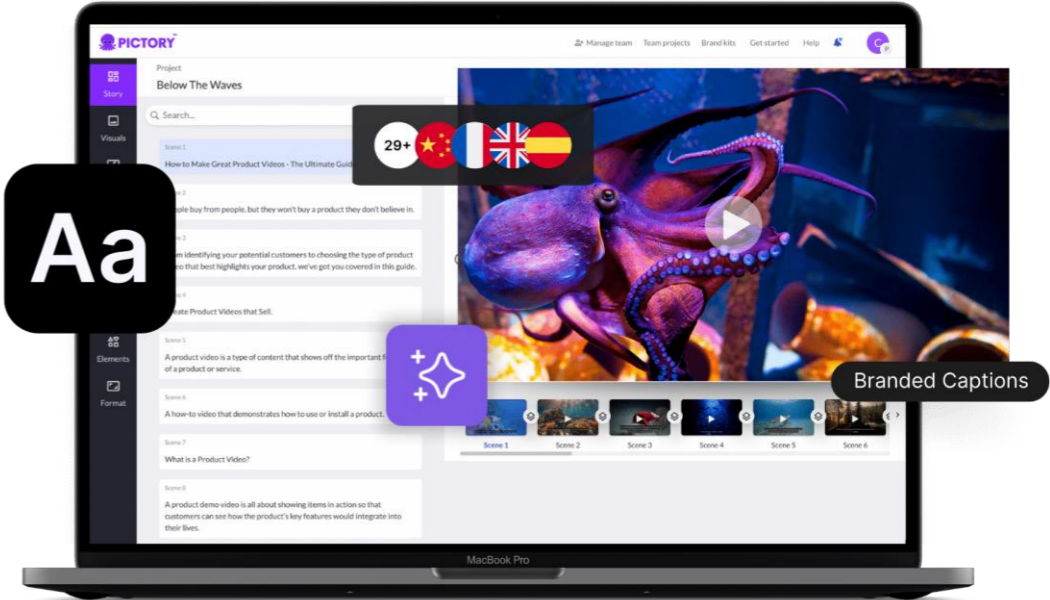
Professional quality videos from your script complete with realistic AI voices, matching footage and music in just a few clicks.

[More Information >](#)

Turn Blog Posts Into Videos For Better SEO and Reduced Bounce Rates

Blog posts automatically become captivating videos both that readers and search engines love.

[More Information >](#)



Screenshot pictory.ai

Storyboard to Video

Result: MOOC [iMooX.at/course/GIKI](https://imoox.at/course/GIKI)

Sociotech: Die Gesellschaft im Kontext der Informationstechnologie



Willkommen im MOOC

Technische Universität Graz
 TU Graz Lehr- und Lerntechnologien, Studierende der TU Graz und Michael Lanzinger



FORUM NEUE MEDIEN IN DER LEHRE AUSTRIA <fnma>

magazin

03|2023

THEMENSCHWERPUNKT: **Erfahrungen mit KI in der Lehre**

WENN KÜNSTLICHE INTELLIGENZ EINEN KOMPLETTEN ONLINE-KURS PRODUZIERT: DER KI-GENERIERTE MOOC „SOCIOTECH“

Generative KI-Tools im Einsatz für die Lehre
 Seitdem im November 2022 ChatGPT veröffentlicht wurde, hat dieses Tool genauso wie eine Vielzahl weiterer generativer KI-Werkzeuge hohe Aufmerksamkeit im Bildungssektor (Irfan et al., 2023). Eine der Fragen ist, wie gut sich KI-Anwendungen bei der Erstellung von Lehr- und Lernmaterialien nutzen lassen. Die Organisationseinheit Lehr- und Lerntechnologien (LLT) der TU Graz hat im Frühjahr 2023 die Entwicklung eines kompletten MOOCs (für massive open online course) durch KI-Tools gestartet, dann auf der Plattform iMooX.at (Ebner, 2022) angeboten und wissenschaftlich begleitet (Gritsch, 2023).

Die Konzeption und Produktion des MOOCs
 Beim Erstellen des MOOCs zum Thema „Sociotech: die Gesellschaft im Kontext von Informationstechnologien“ wurde die Erstellung durch KI klar kommuniziert. Ein Team aus Mitarbeiter:innen und Studierenden der TU Graz entwickelte den Kurs, wobei Anweisungen („Prompts“) für die KI hauptsächlich von den Studierenden erstellt wurden, die Mitarbeiter:innen dazu Rückmeldungen gaben. Bei der gesamten Produktion nutzte man KI-Tools, wobei Prompts auch verbessert („Prompt Engineering“) und z.B. HSP-Interventionen im Video manuell ergänzt wurden. Vorrangig wurde nach frei verfügbaren Tools gesucht und diese wurden zum Teil auch genutzt (ChatGPT, Lexica.art). Es wurden aber auch einige Lizenzen angekauft (für die Video- und Audioerstellung: Elai, Pictory, elevenLabs, Käiber, D-ID, für die Bilderstellung: Midjourney). Nach Absprache mit einem Rechtsexperten wurde der MOOC mit der Lizenz CC BY-SA 4.0 International auf iMooX.at veröffentlicht (vgl. Lanzinger in: Schön, 2023).

MOOC-Gestaltung und Durchführung
 Der MOOC startete im Mai 2023; wöchentlich wurde eine Lektion freigeschaltet. Während dieser Phase wurde das Forum von einem der studentischen Mitarbeiter betreut. Der Kurs steht auch jetzt weiterhin kostenlos und offen lizenziert online zur Verfügung, jedoch ohne betreutes Forum: <https://imoox.at/course/GIKI>. Insgesamt haben sich mehr als 550 Personen zum MOOC eingeschrieben (Stand 28.9.23).

20 JAHRE <fnma>

Martin Ebner, Sarah Edelsbrunner, Sandra Schön

German Publication: Wenn Künstliche Intelligenz einen kompletten Online-Kurs produziert: Der KI-generierte MOOC „Sociotech“ [fnma Magazin 03/23](https://fnma.at/magazin/03/23)

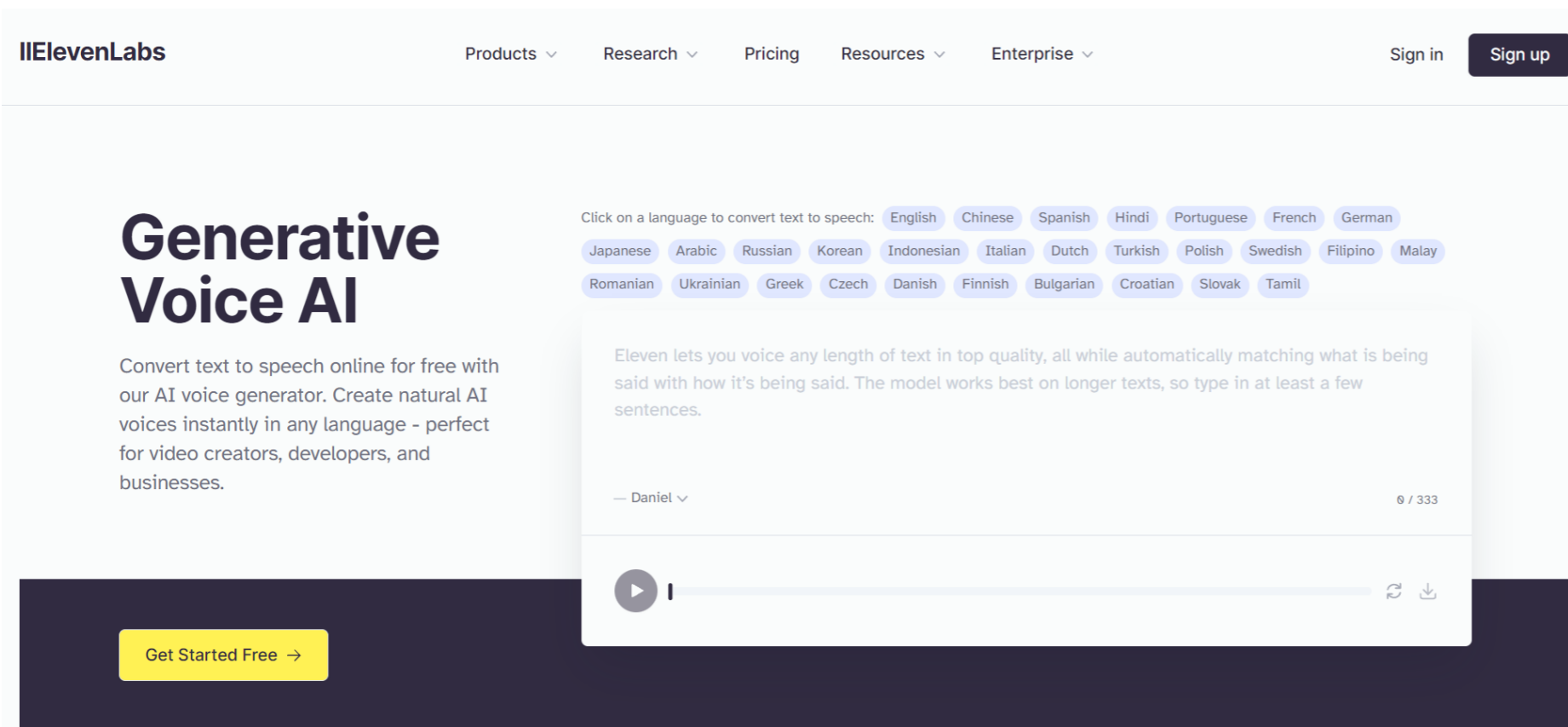
Asset Generation

generate a background image, abstract and colorful, large areas so it does not distract, for an educational video



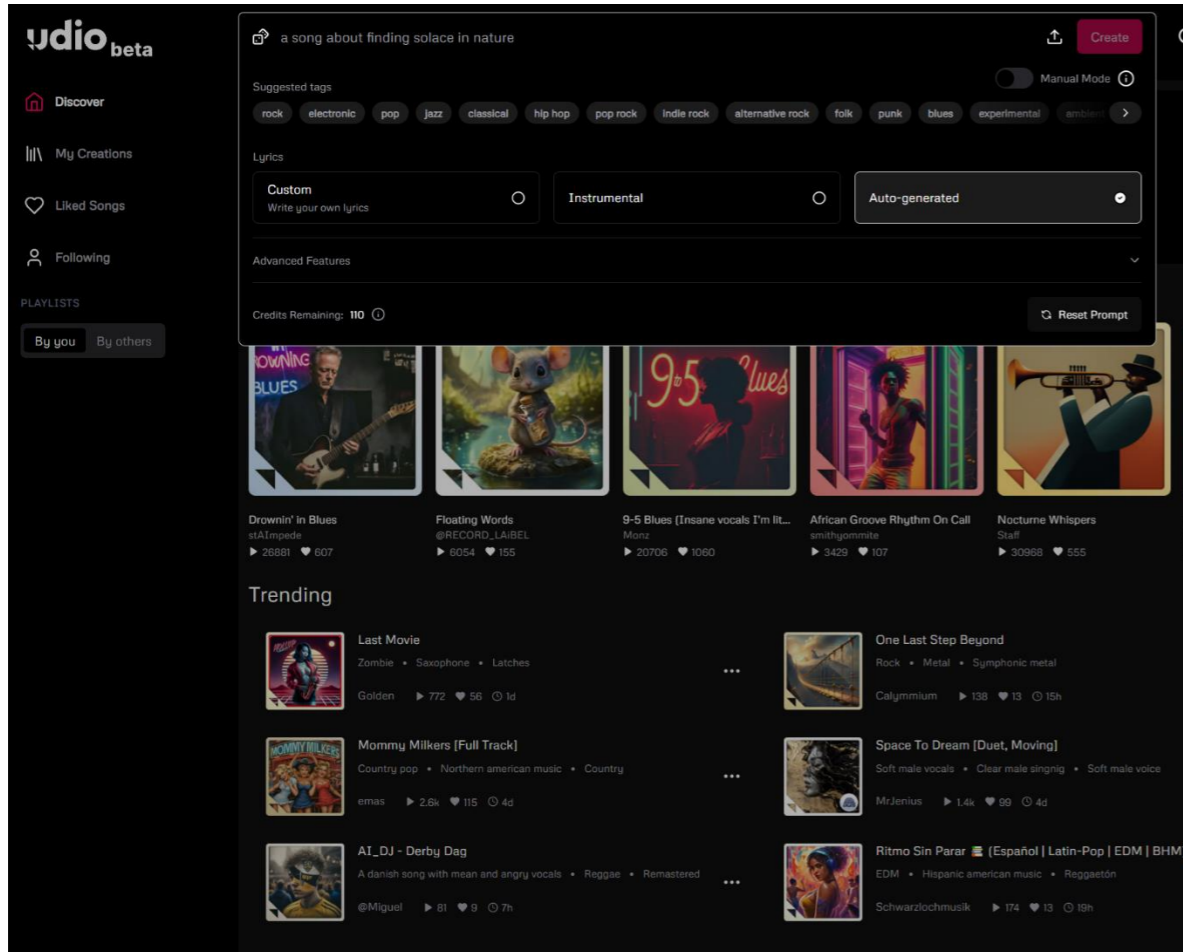
Here is the abstract, colorful background image suitable for an educational video. If you need any adjustments or further customization, please let me know!

Audio: Text to Speech




Screenshot elevenlabs.io

Music



Screenshot udio.com



Post form

<https://x.com/udiomusic/status/1778045322654003448>

AI Sound Engineer

Our features

Make better audio

Auphonic is your all-in-one audio post production webtool to achieve a professional quality result.

[Listen to our algorithms →](#)



Intelligent Leveler

Balances levels between speakers, music and speech – no compressor knowledge required.



Filtering & AutoEQ

Removes unwanted frequencies and sibilance (De-Esser) and creates a clear, warm, and pleasant sound.



Multitrack Algorithms

Process multiple tracks to create an optimized mixdown - featuring automatic ducking, noise gate and crosstalk removal.



Speech2Text & Automatic Shownotes

Multilingual speech-to-text with auto-generated shownotes and chapters displayed in a shareable transcript editor.



Noise & Reverb Reduction

Define whether Auphonic should remove only static or also fast-changing noises and if we should keep or eliminate music.



Cut Filler Words and Silence

Automatically cut silent segments, pauses, and filler words like "ah", "uhm", "mh", or "ähm" in multiple languages.



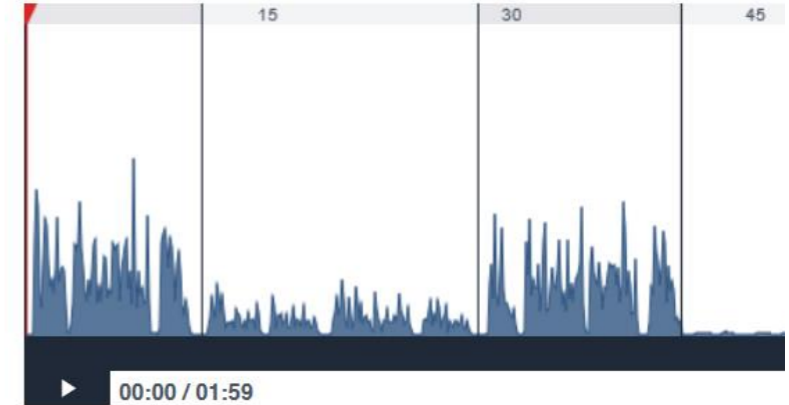
Loudness Specifications

Define a target loudness, true peak limit, MaxLRA and more for consistency across files and compliance with audio specs.

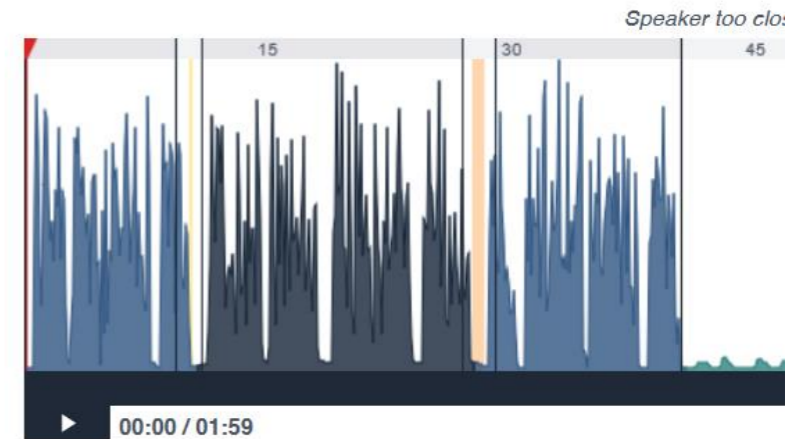


Video Support, Metadata & Chapters

We produce enhanced audio or video podcasts with chapters and waveform audiograms in all output formats you need.

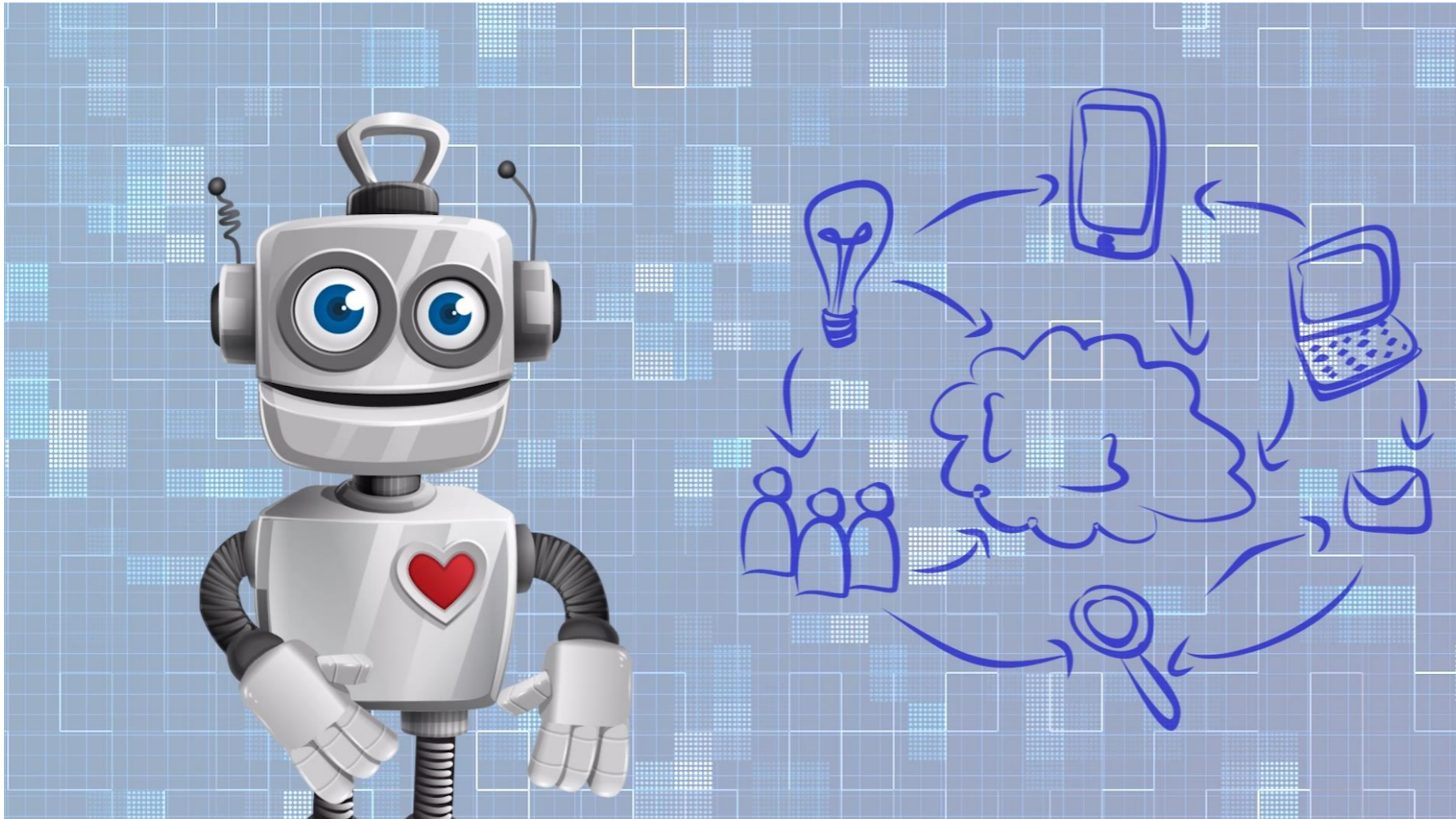


Processed with Adaptive Leveler:

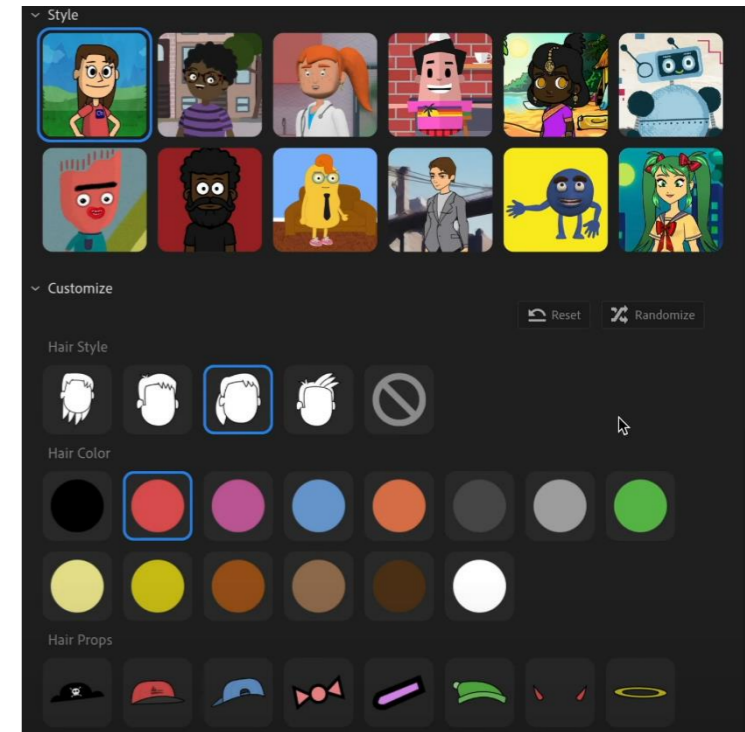


Screenshot auphonic.com

Video: Character Animation



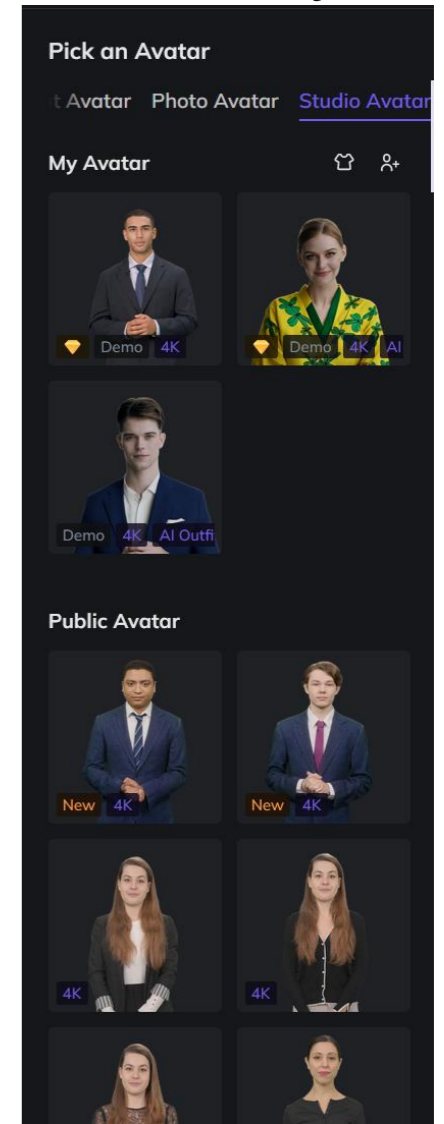
Screenshot Adobe Character Animator



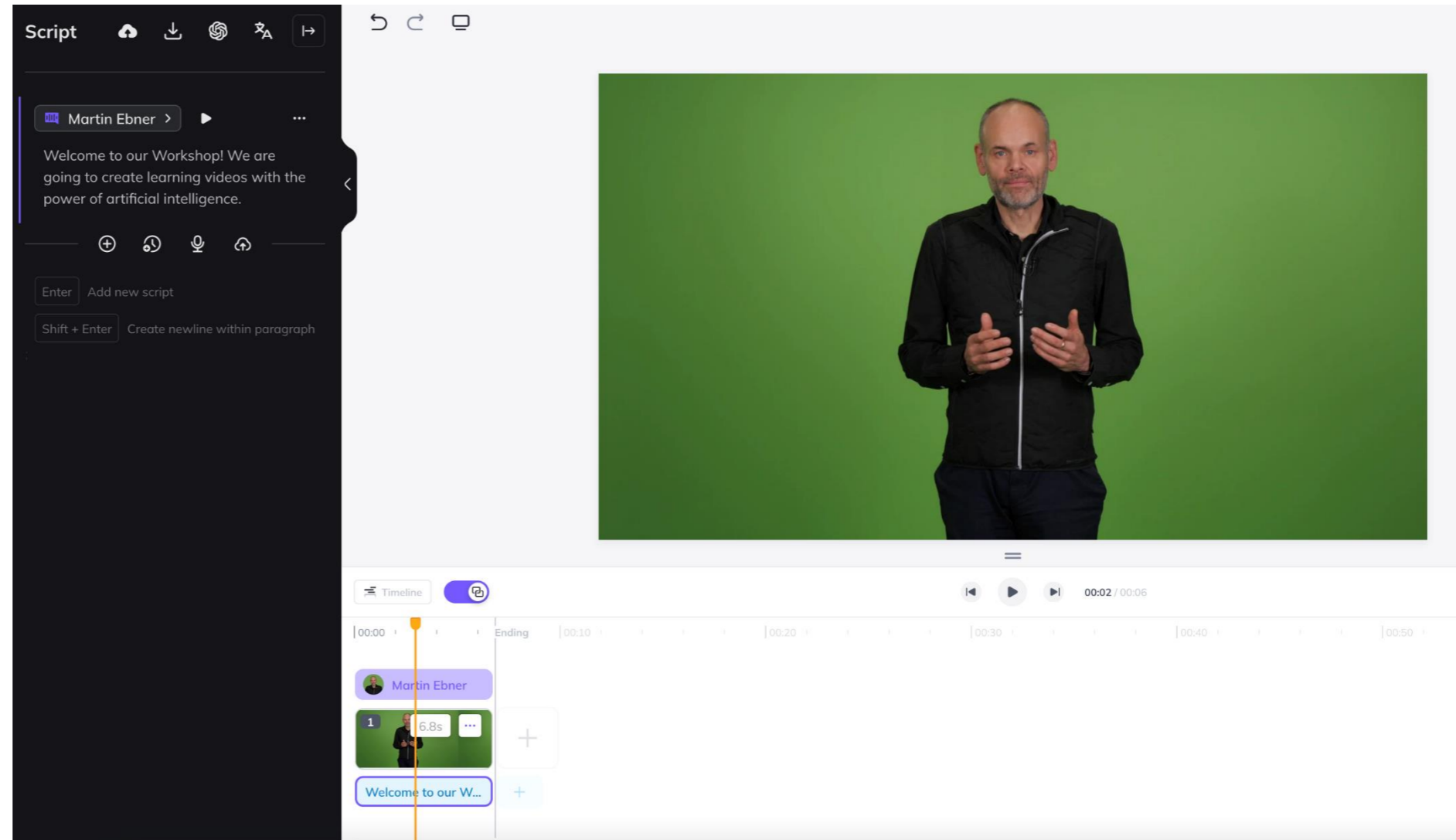
Video: Human Avatar



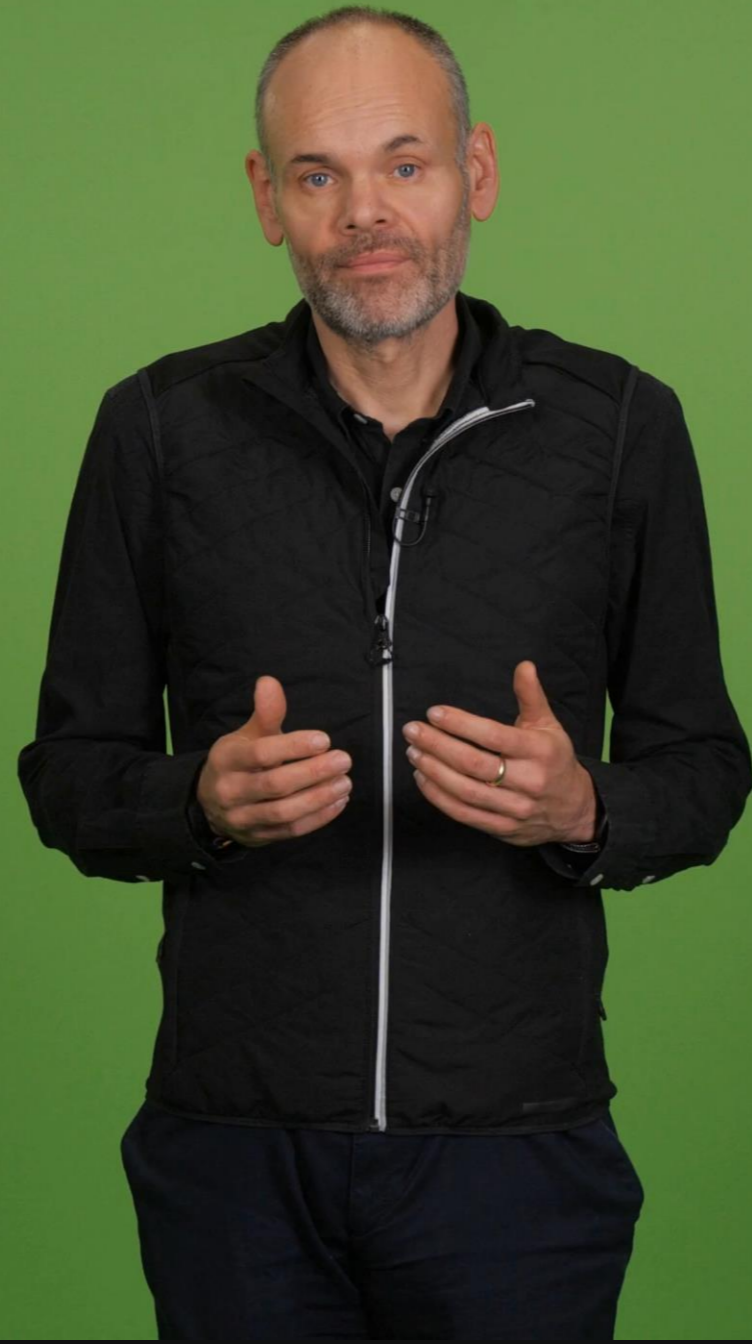
Screenshot HeyGen



Workflow for Human Avatar Videos



The screenshot displays a software interface for creating human avatar videos. On the left is a dark-themed 'Script' editor with a text area containing the text: 'Welcome to our Workshop! We are going to create learning videos with the power of artificial intelligence.' Below the text are icons for adding, undo, redo, and refresh, along with keyboard shortcuts: 'Enter Add new script' and 'Shift + Enter Create newline within paragraph'. On the right is a video preview window showing a man in a black jacket speaking against a green background. Below the preview is a timeline with a playhead at 00:02 / 00:06. The timeline shows a single clip labeled 'Martin Ebner' with a duration of 6.8s and a text overlay 'Welcome to our W...'.



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Benedikt Brünner | 2024-10-23

Workflow for Human Avatar Videos

green screen
is removed



Workflow for Human Avatar Videos

assets and text overlays will be added



Screenshot Adobe Premiere Pro

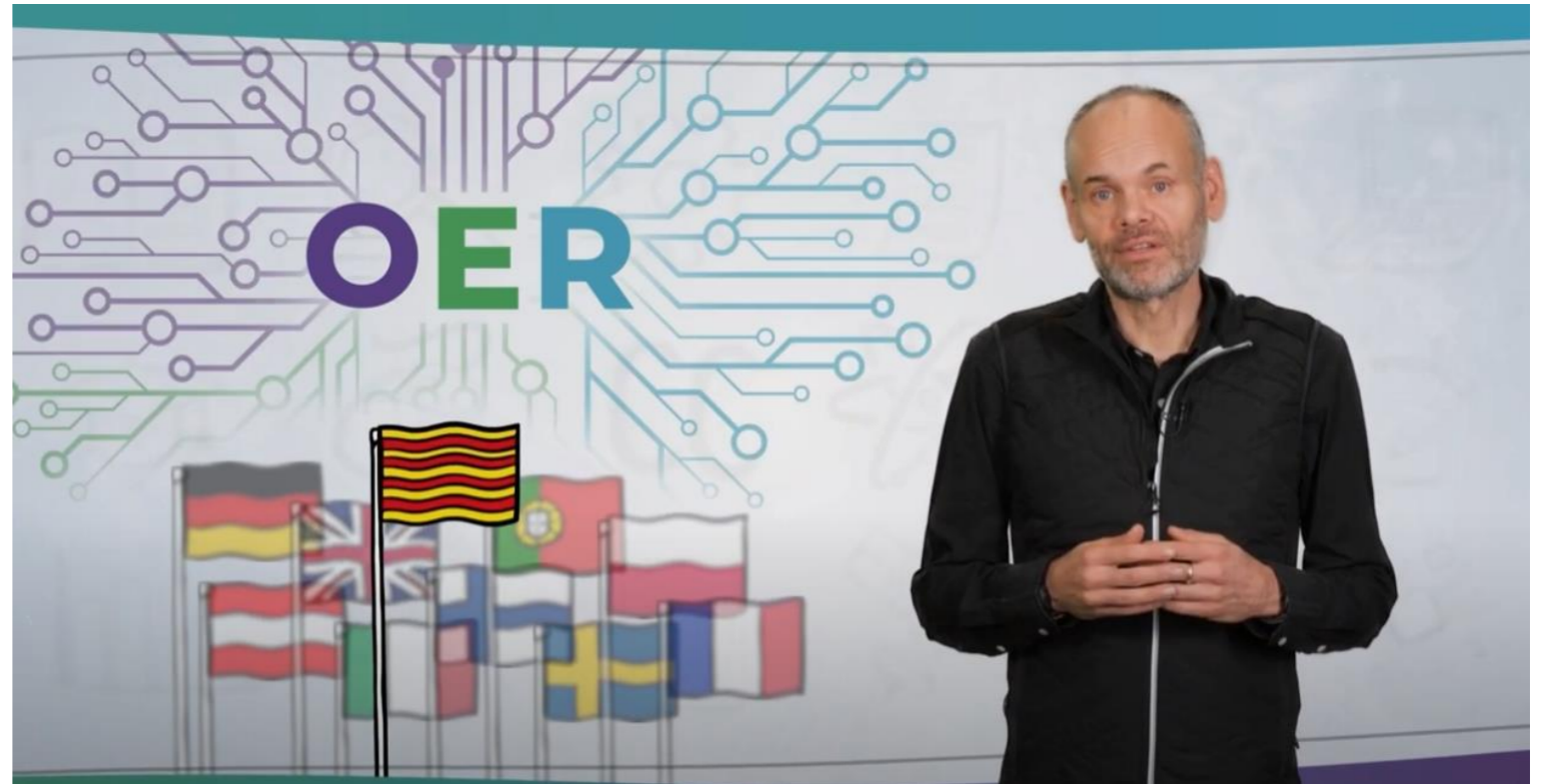
Multilingual Video Generation

iMooX.at/course/OERinHE

CC-BY 4.0 iMooX.at

OER MOOC

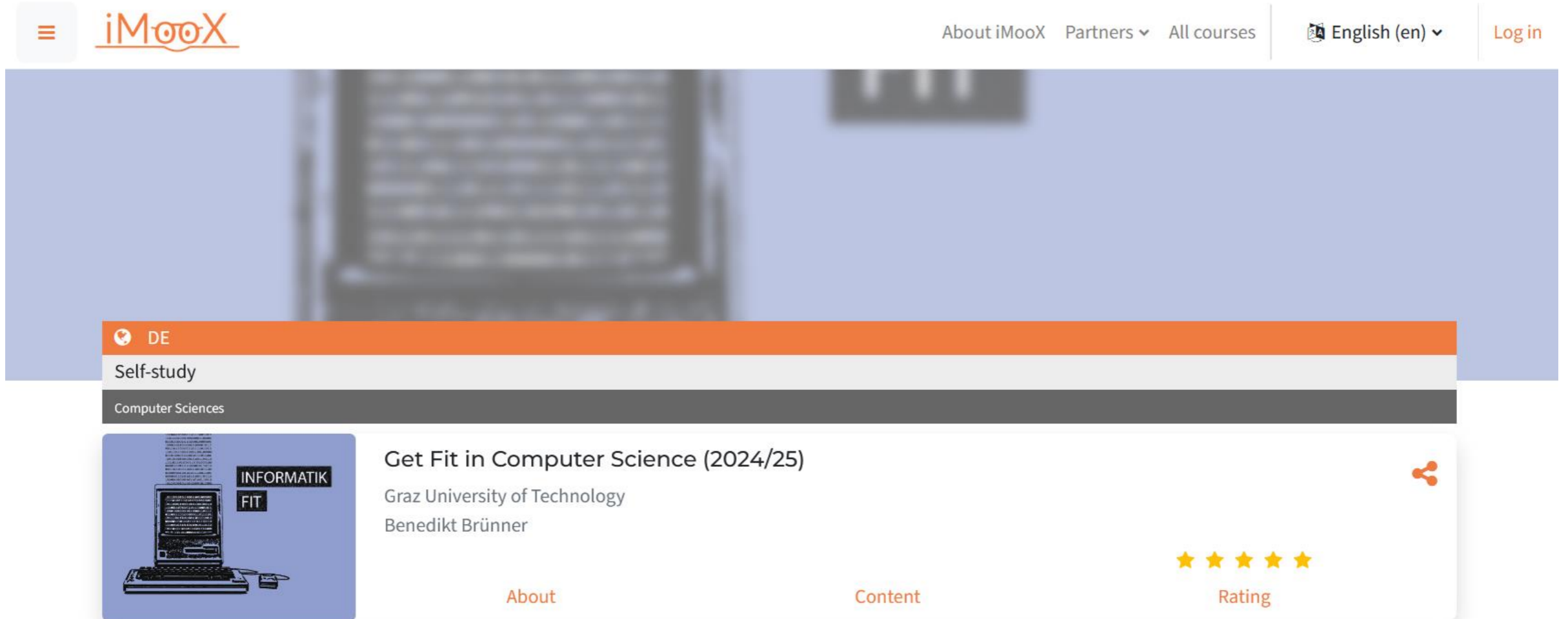
- custom avatar
 - fine-grained post production
- + automatic translation
with feedback loop
- + 11 languages
- avatar emotions



youtube.com/watch?v=KpEWw5zz--c

Current Research: AI Avatars

MOOC iMooX.at/course/infoFit24



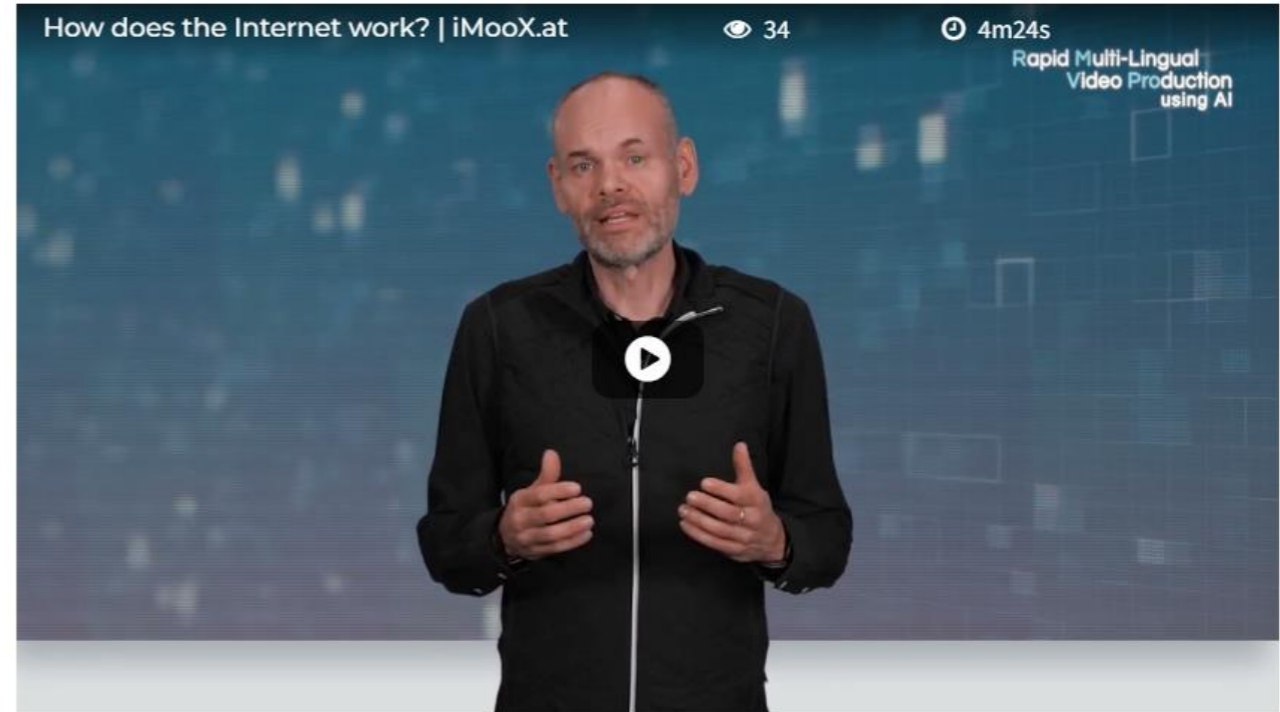
The screenshot shows the iMooX website interface. At the top left is the iMooX logo. To the right are navigation links: 'About iMooX', 'Partners', 'All courses', a language dropdown set to 'English (en)', and a 'Log in' button. Below the navigation is a large blue banner image. Underneath the banner is a horizontal menu with 'DE' selected, 'Self-study', and 'Computer Sciences'. The main content area features a course card for 'Get Fit in Computer Science (2024/25)' by Graz University of Technology, taught by Benedikt Brünner. The card includes a thumbnail image of a laptop with 'INFORMATIK FIT' text, a share icon, a five-star rating, and three buttons: 'About', 'Content', and 'Rating'.

Students can Select Language

 Deutsch



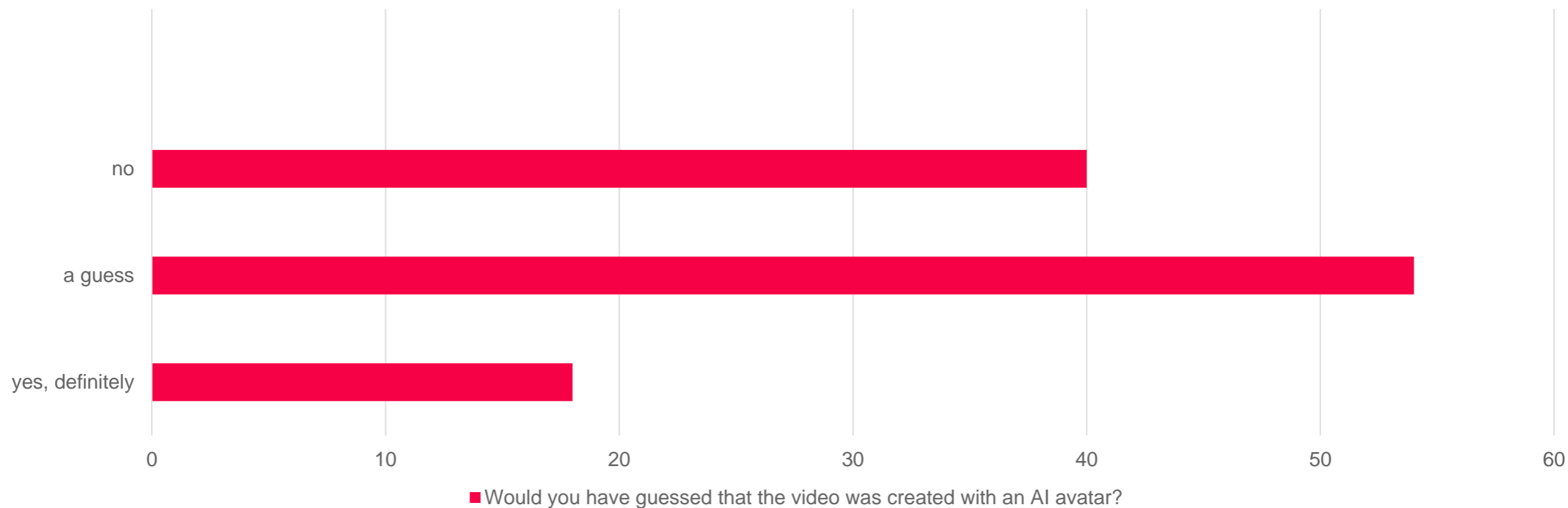
 Englisch



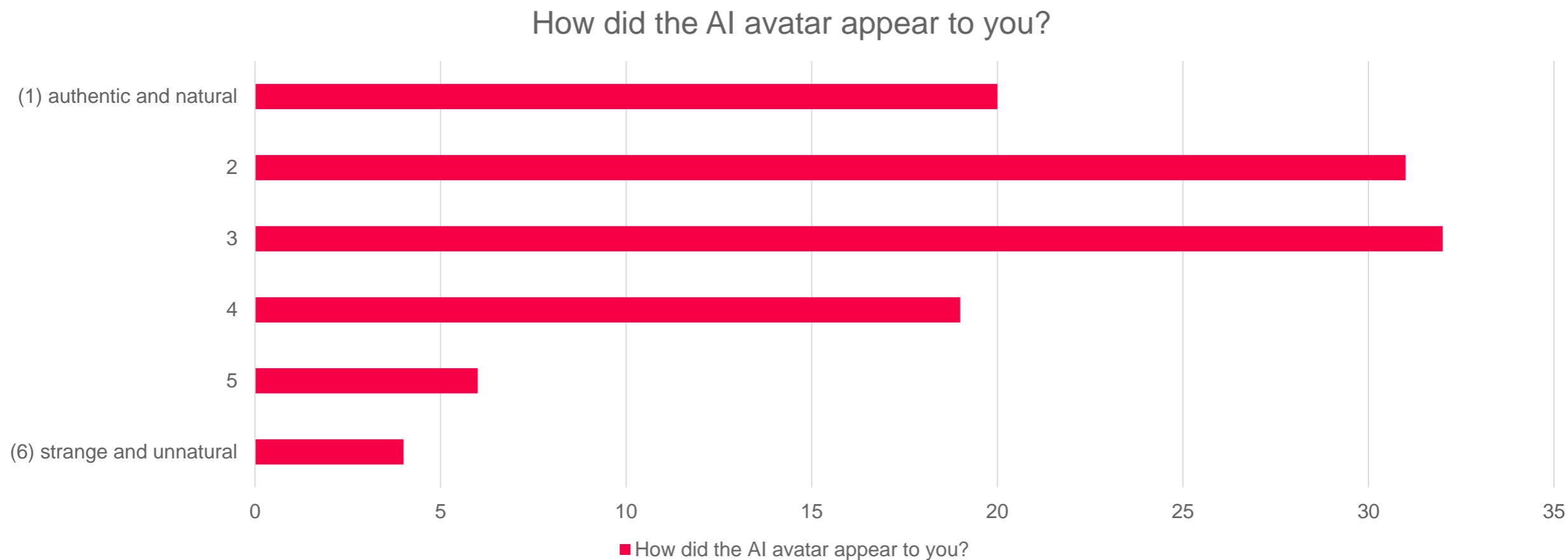
[Transkript zum Video](#)

Feedback from Students

Would you have guessed that the video was created with an AI avatar?

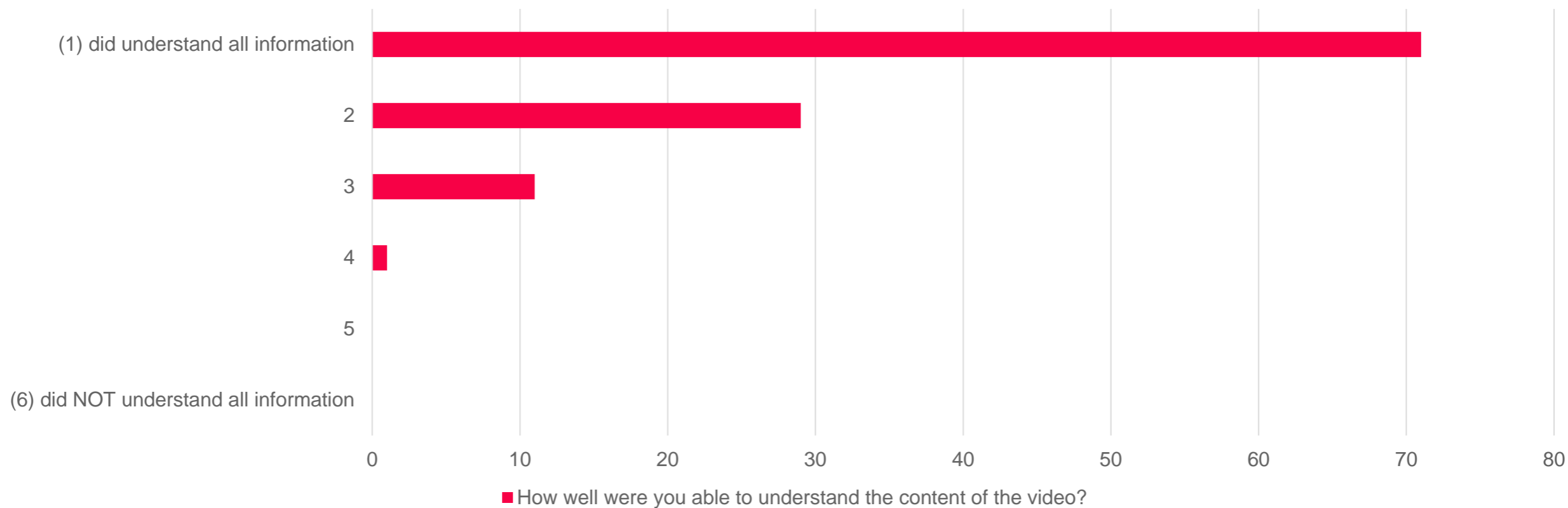


Feedback from Students



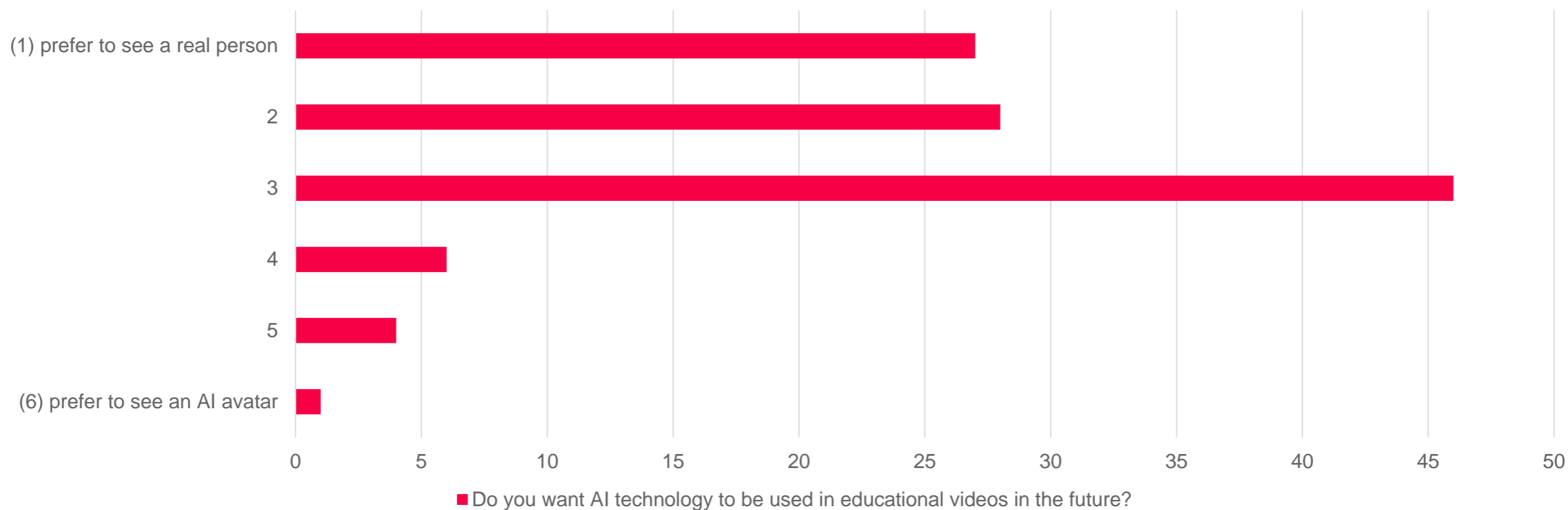
Feedback from Students

How well were you able to understand the content of the video?



Feedback from Students

Do you want AI technology to be used in educational videos in the future?



How does the Internet work?

[youtube.com/watch?v=eTM5ZSZ2TnU](https://www.youtube.com/watch?v=eTM5ZSZ2TnU)



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