

Rapid Multilingual Video Production (RMVPro) utilizing Artificial Intelligence

Institute of Human-Centred Computing

2025-05-21 | EdMedia + Innovative Learning, Barcelona

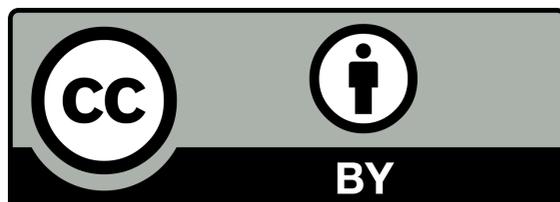
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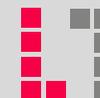
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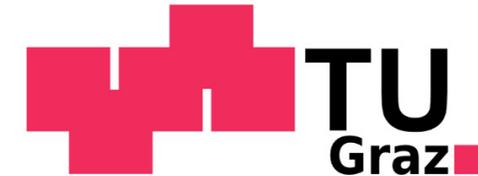
Benedikt Brünner & Martin Ebner (2025)
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Acknowledgments

FutureDEAL

Digital Education And Learning



This research was done as part of the "FutureDEAL - Future of Digital Education and Learning" initiative within the doctoral program "Bildungsinnovation braucht Bildungsforschung", which is supported and partially funded by the Austrian Federal Ministry of Education and Austrian Federal Ministry of Women, Science, and Research.

Introduction

- Multilingual learning material important for higher education
- Challenges of traditional video production
 - time
 - cost
 - quality assurance
- Goal of the study
 - accelerating multilingual video creation
 - **without compromising quality**

Central research question

How can multilingual educational videos be rapidly produced using AI while ensuring quality?

Rapid Multilingual Video Production (RMVPro)

- *“Multilingual Video Sprint”*
 - inspired by book sprints
- Video-Didactics based on
 - Learning Video Canvas
- Objective
 - multilingual field-test of framework

Learning Video Canvas
COLLECTION OF IDEAS FOR 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?

Question / problem / motivation
 What is being explained and why?

What needs to be said?

What needs to be visualized?

What needs to be shown?

What needs to be written/shown as a text?

What needs to be repeated?

IDEAS FOR IMPLEMENTATION

PRODUCTION AND SCHEDULE

Resources

1. Staff
 Expert
 Camera person

2. Equipment
 Camera
 Laptop

3. Places
 Studio
 Field

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: _____

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TO BE CLARIFIED

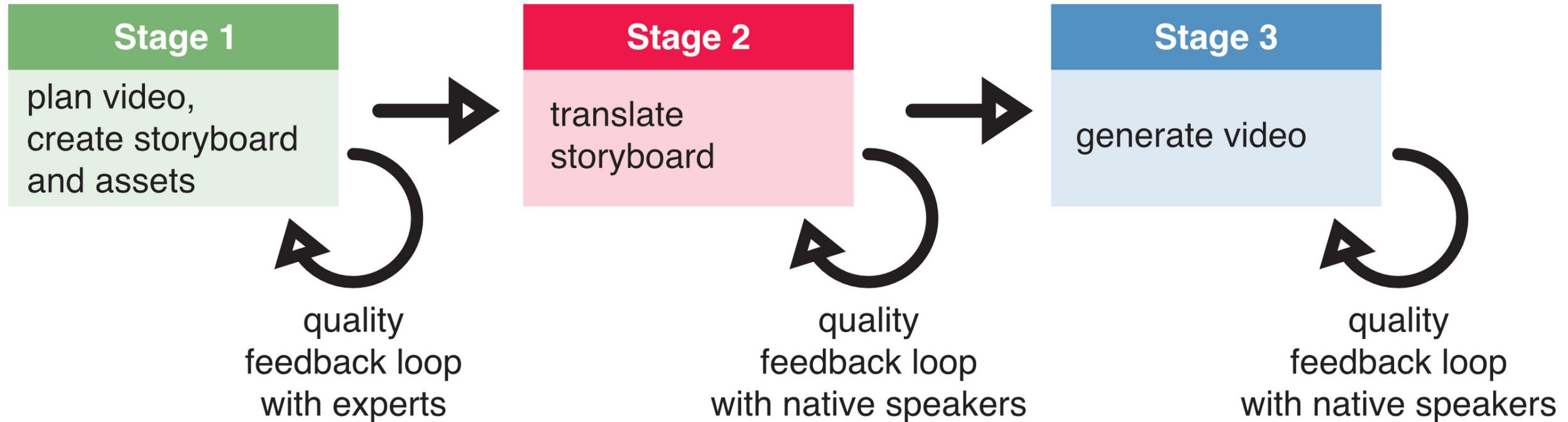
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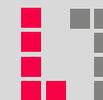
Framework Overview

RMVPro

Rapid Multilingual Video Production



how?



how?

International Experts

International Experts

Workshop at EdMedia + Innovative Learning 2024



Method

1. Prepare **stage 1** before EdMedia 2024
2. Execute **stage 2** during EdMedia 2024
3. Finalize **stage 3** after EdMedia 2024
4. Test student reactions in a multilingual setting

Framework: Rapid Multi-Lingual Video Production (RMVPro)

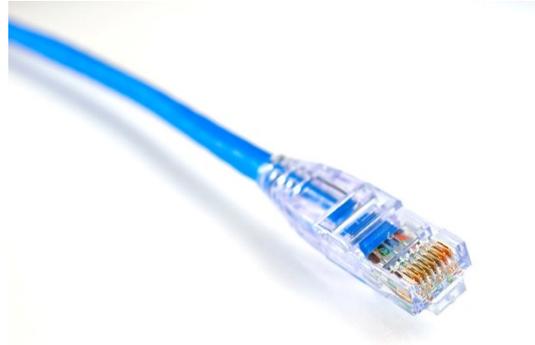
- 3 stages
 - **stage 1:** plan video, create storyboard and assets (+ feedback loop)
 - **stage 2:** translate storyboard (+ feedback loop)
 - **stage 3:** generate video (+ feedback loop)

Stage 1 (pre EdMedia): plan video, create storyboard and assets

- **topic:** introduction to networking technologies
- **target group:** secondary school students (aged 15 to 18 years)
- **storyboard:** created and improved by one feedback-loop with experts from Graz University of Technology, Austria
 - optional: feedback-loop with other experts (skipping this today)

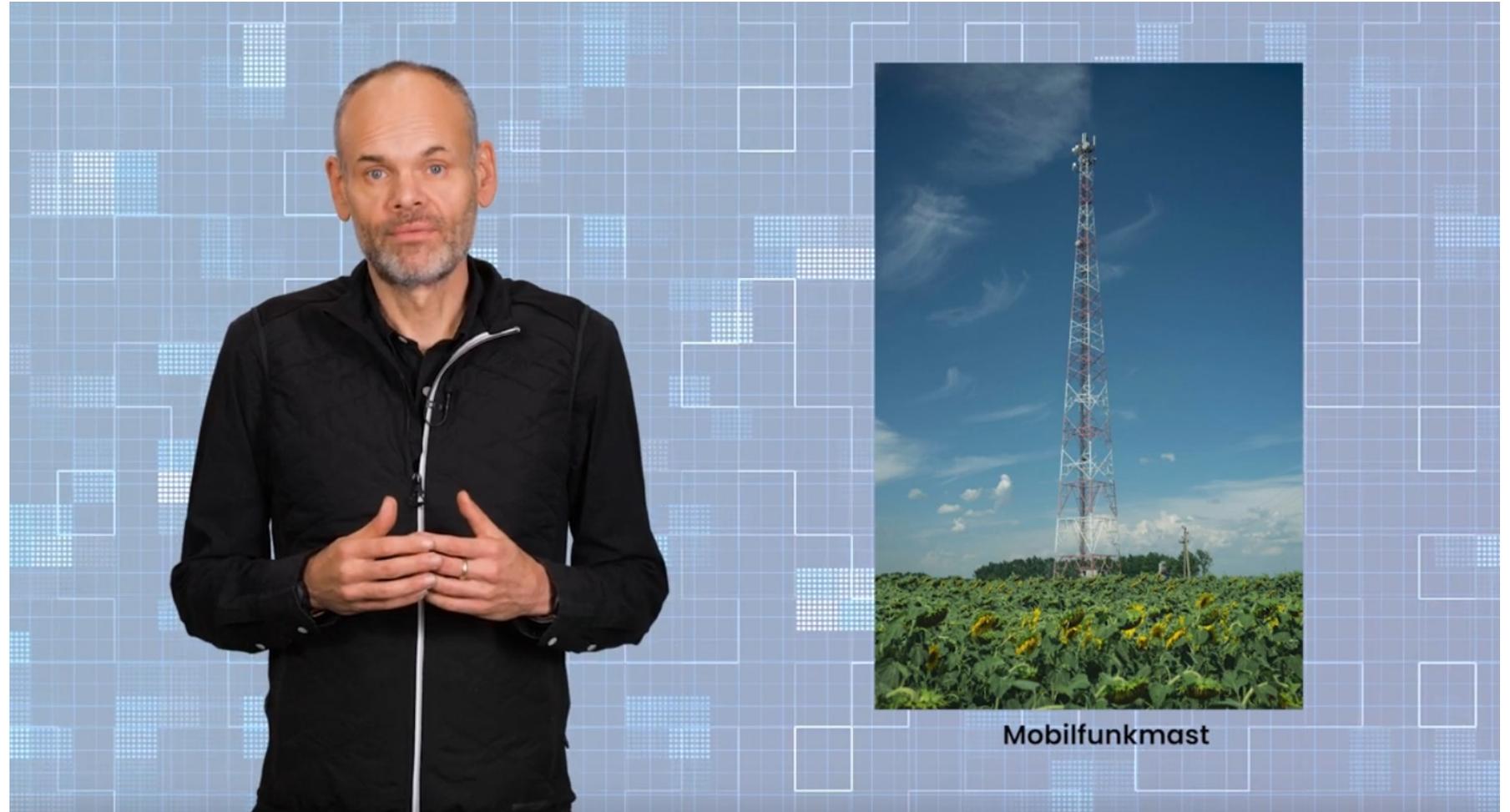
Stage 1 (pre EdMedia): plan video, create storyboard and assets

- assets



Stage 1 (pre EdMedia): plan video, create storyboard and assets

- video style



Stage 2 (during EdMedia 2024): translate storyboard

- all texts were translated with ai (DeepL)
 - 20 scenes (4 - 20 seconds)
 - 23 text overlays in the video

- **your task: check, how those translations are pronounced**
 - use elevenlabs.io to test the pronunciation
 - correct text, if needed
 - send us updated version

English RMVPro.txt

RMVPro (English Version)

=====

1: The internet plays an important role in our everyday lives - whether it's for communication, searching for information or entertainment. But the economy, healthcare and many other areas are now also dependent on the internet.

2: If the internet suddenly stopped working, it would cause a lot of problems. But how does the internet work in the first place? That's what this series of videos is about.

3: The internet is a network of cables and devices that spans the entire world. In computer science, networks are used to send data, for example from one computer or smartphone to another device.

...

Text overlays

=====

21: The internet

22: Computer

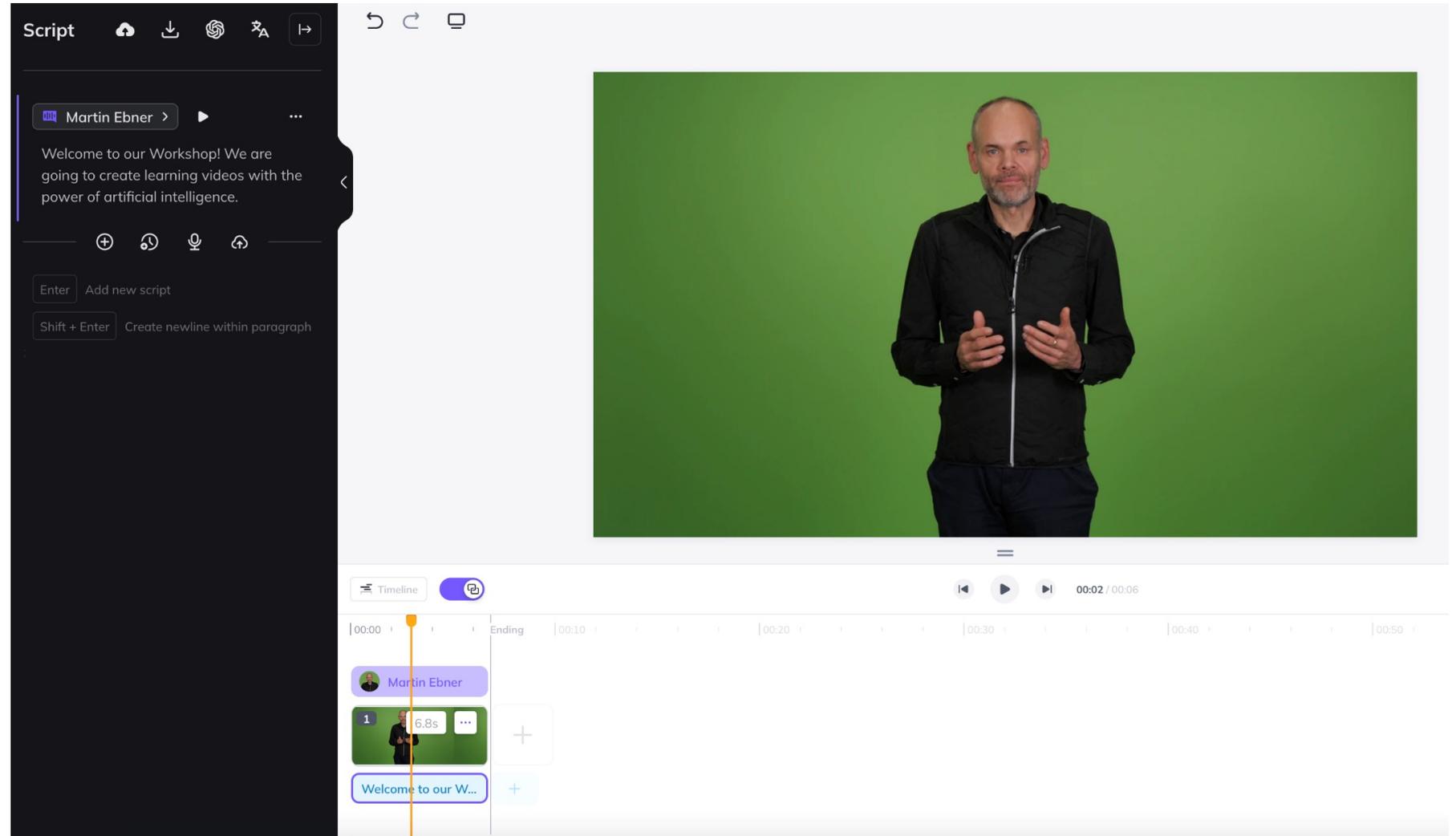
23: Computer center

24: Server

...

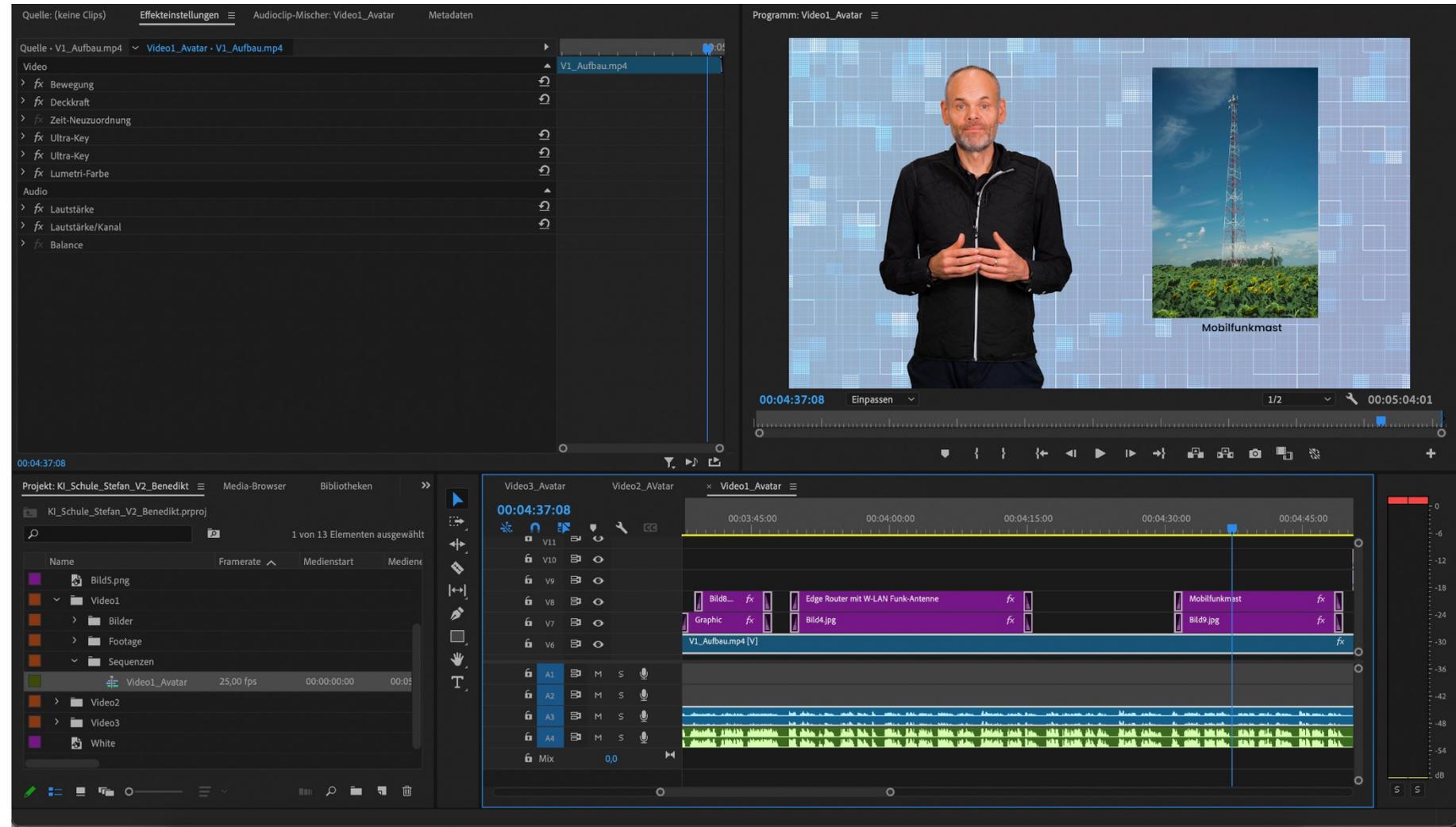
Stage 3 (after EdMedia): generate video (+ feedback loop)

video according to new storyboard will be generated with HeyGen



Stage 3 (after EdMedia): generate video (+ feedback loop)

assets and text overlays will be added



Screenshot Adobe Premiere Pro

Evaluation Results

- **Stage 2**
 - feedback from experts and native speakers during EdMedia 2024
 - example correction from “text above” to “text before”

- **Stage 3**
 - mis-pronounced sections in the videos
 - misspelled text overlays
 - overall
 - high satisfaction of participants with the video

- Student field test
 - MOOC-based student feedback (N=128)

MOOC Page

Deutsch

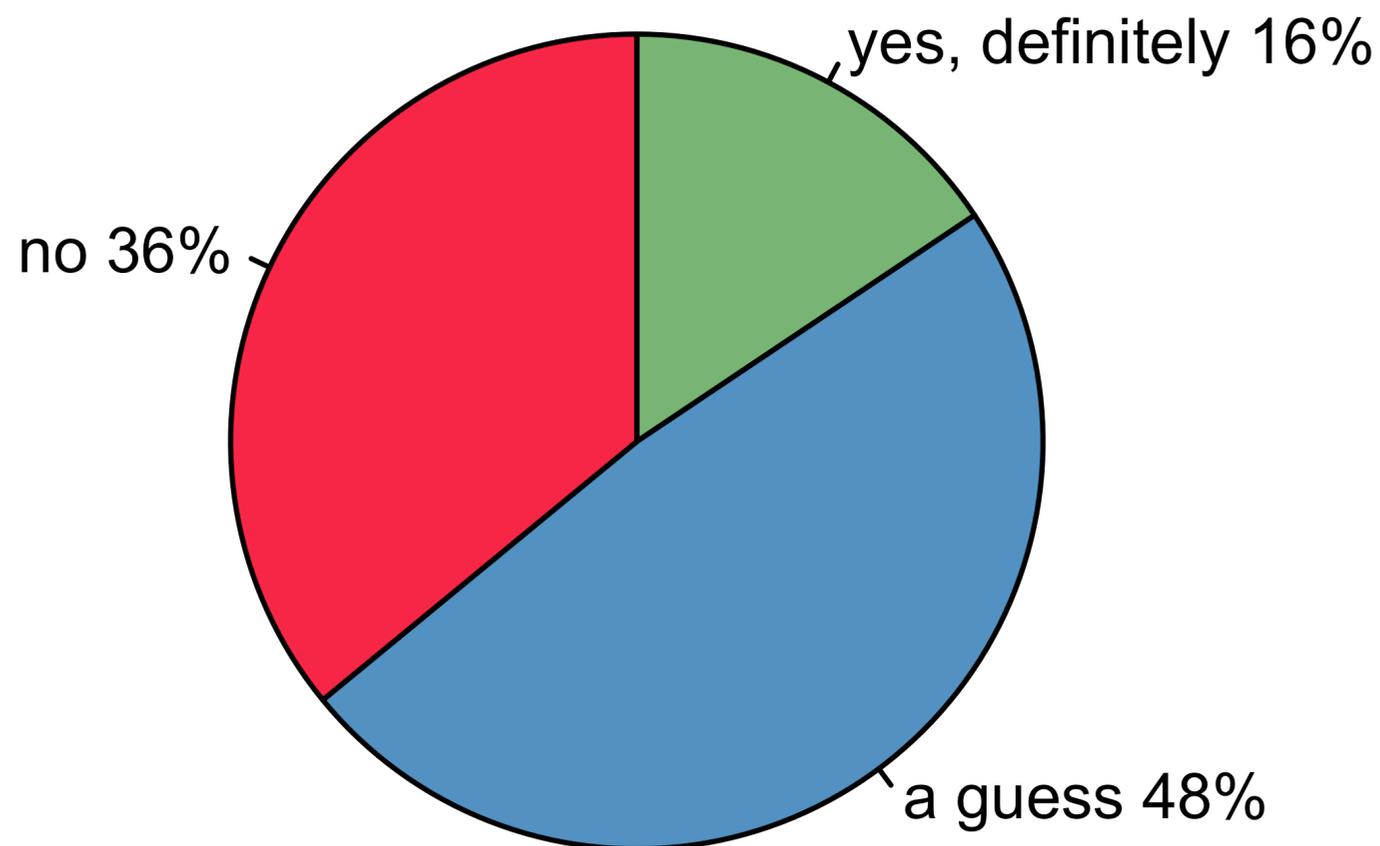


Transkript zum Video

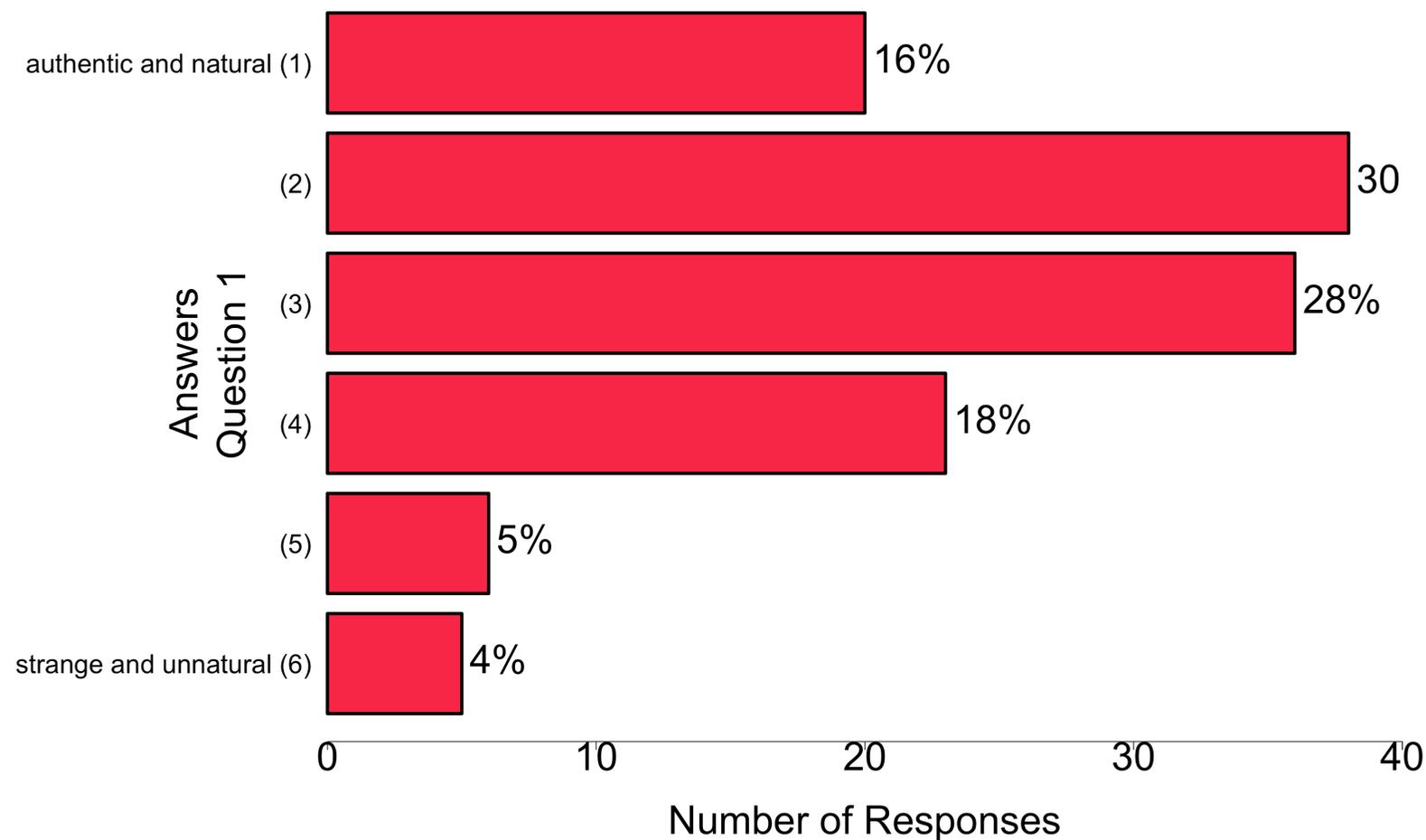
English



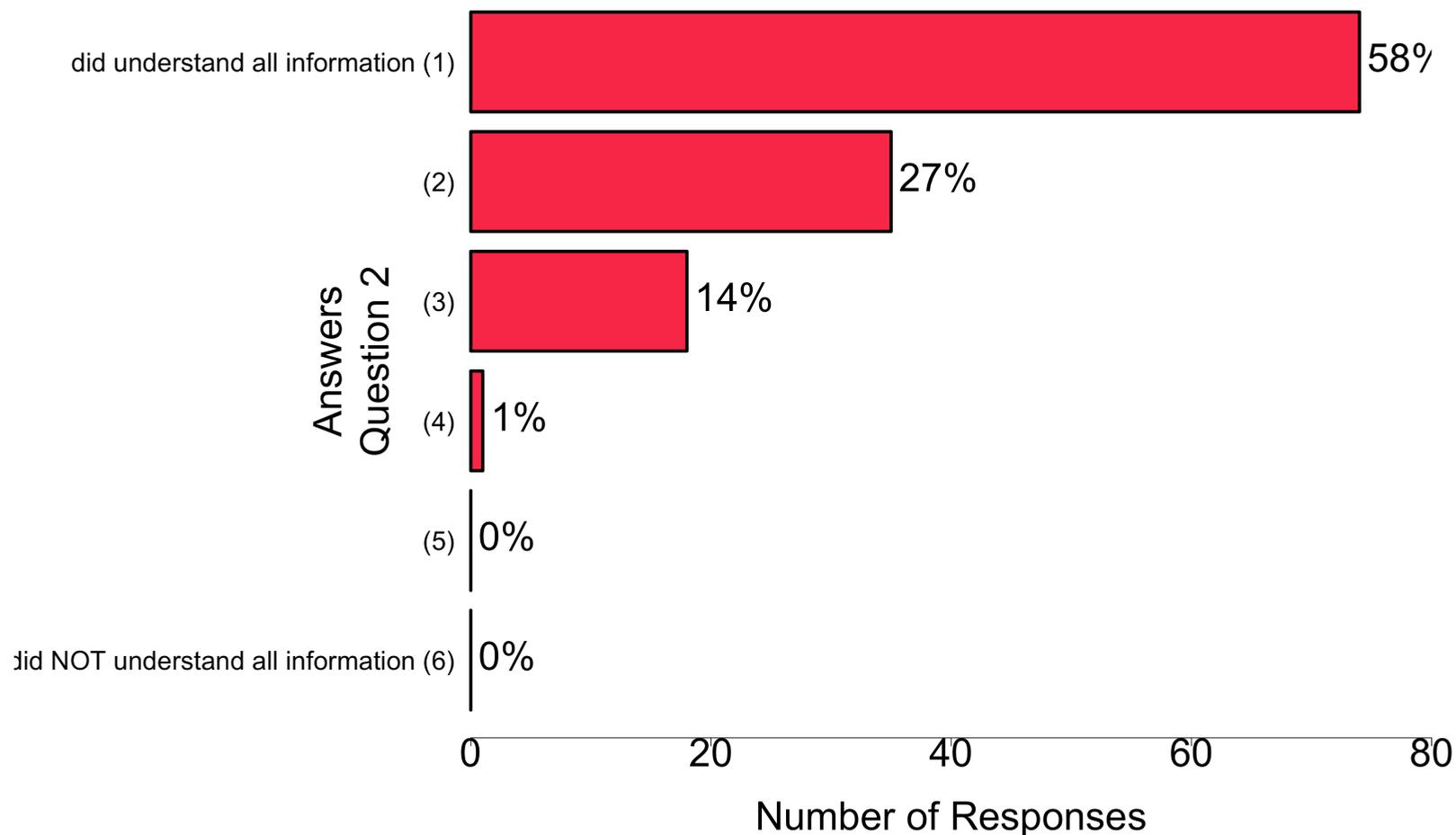
Would you have **guessed** that the video was created with an **AI avatar**? (N = 128)



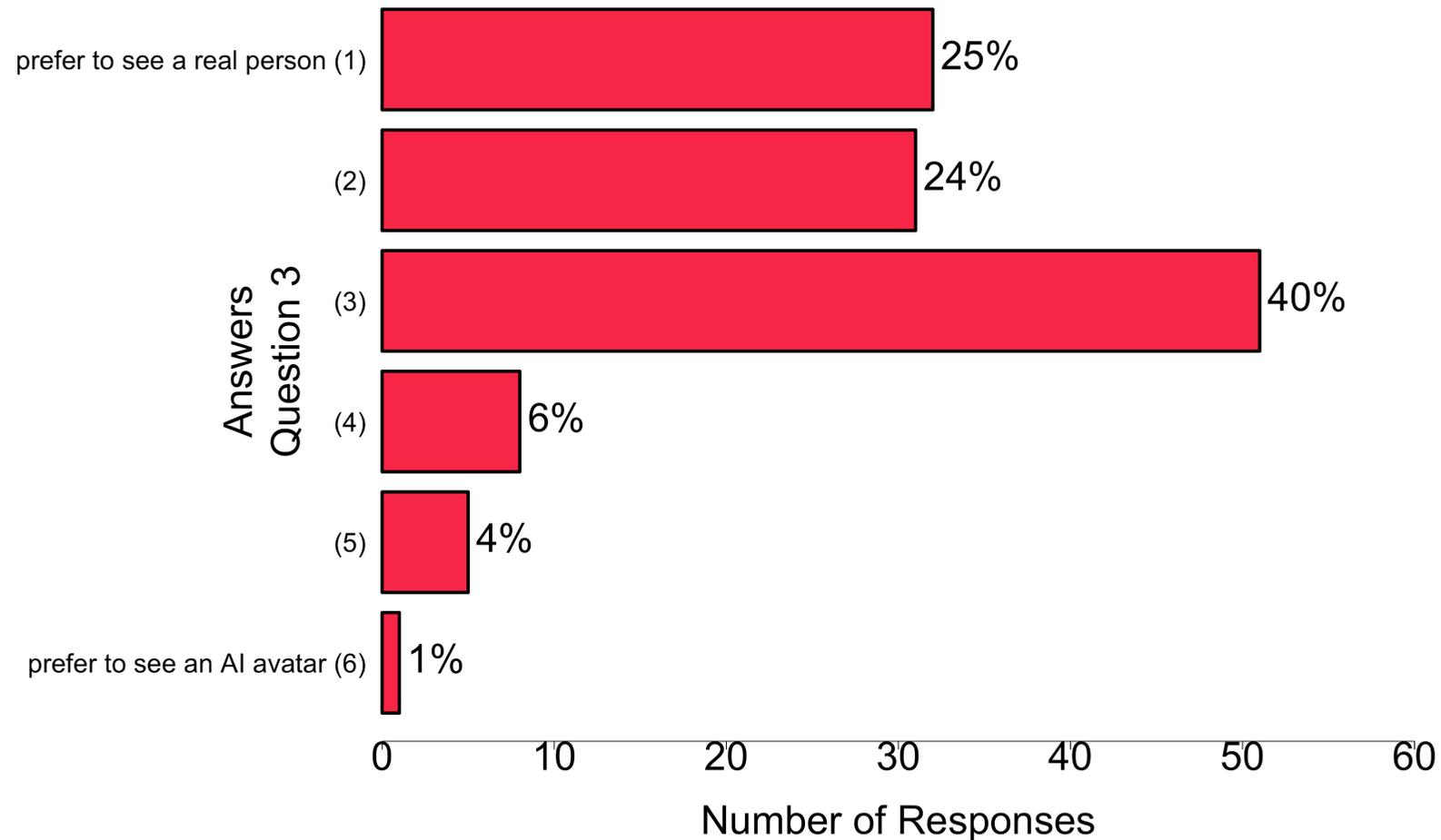
How did the **AI avatar** appear to you? (N = 128)



How well were you able to understand the content of the video? (N = 128)



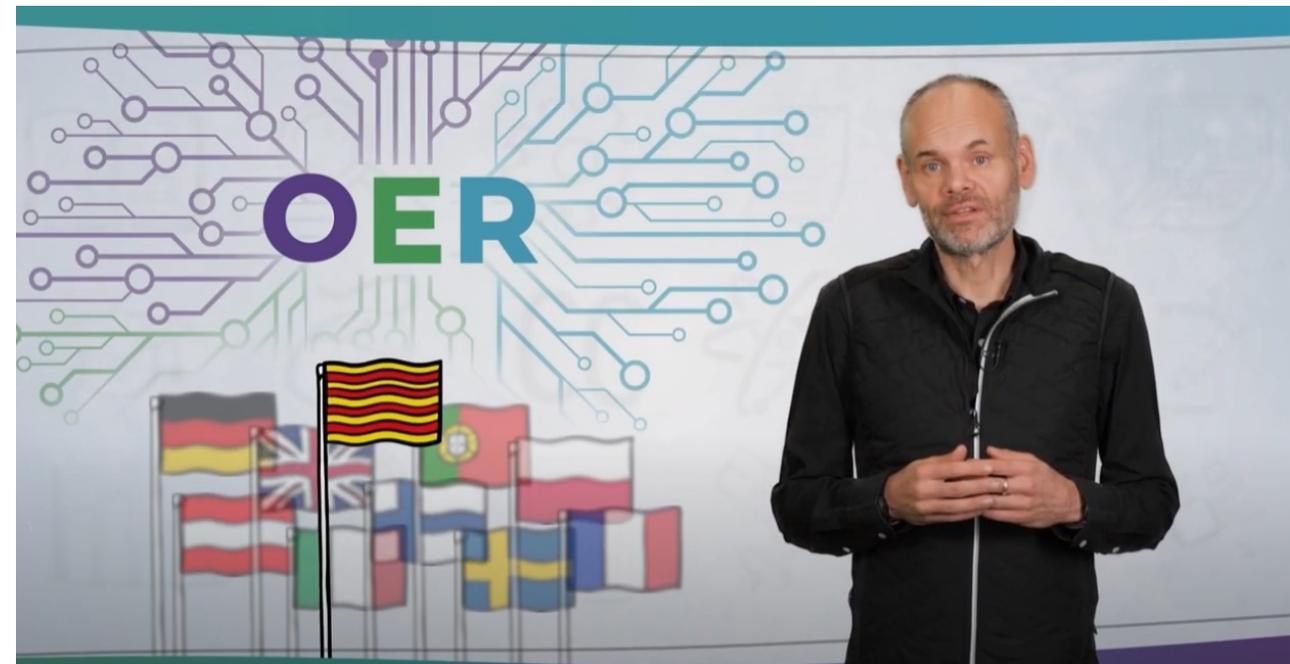
Do you want AI technology to be used in educational videos in the future? (N = 128)



Discussion

- RMVPro enables quality + speed
- Importance of native speaker feedback
 - even in final stage
- Trade-offs
 - authenticity vs. efficiency
- Practical use of AI avatars
 - MOOC in 15 languages

<https://iMooX.at/course/OERinHE>



Challenges & Limitations

- AI translation quality (e.g. Chinese)
- Technical issues with tools during live demo
- Coordination complexity across languages
- Terminology and pronunciation challenges

Outlook

- RMVPro is a **promising approach** for rapid multilingual video production
- Suitable especially where **speed and resource efficiency** are critical
- Future research
 - scaling
 - improving avatar naturalness
 - language-specific issues
 - reduce complexity: AI generated educational podcasts
 - aicast (SIG Workshop & Poster at EdMedia 2025)

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