The impact of avatars in educational videos: an experience

Marco Toffanin, Vincenzo D'Ignoti Zarzana

Avatars and AI voices offer: Flexibility Time saving Costs saving





Key question:

Are these new modalities perceived as equally effective compared to traditional educational videos with real teachers and human voices?



Experiment 1

AI tool (2 minutes)

- Informative video introducing a new
- Target : Teachers and university staff
- Submission: Randomly



Avatars, AI voice and graphics

Good morning! I'm Lucrez-IA, the virtual assistant for Moodle at the University of Padua. How can I help you with Moodle today?

	Ciao, chi sei?
*	Ciao, sono Lucrez-IA, l'assistente virtuale dell'Ufficio Digit basata sulle più recenti tecnologie di Anthropic. Il mio com ricerche, analisi, scrittura e molto altro ancora. Sono qui p delle mie capacità. Fammelo sapere se hai bisogno di qua
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	Analizza sinteticamente il seguente file Primo_canto.pdf
	4:44 / 11:11

Human voice and graphics

Guten Morgen Lucrezia!

Guten Morgen! Ich bin Lucrez-IA, der virtuelle Assistent für Moodle der Universität Padua. Wie kann ich Ihnen heute mit Moodle helfen?

Good morning Lucrezia!

AI voice and graphics

HD ∠⁷ 🗘

tal Learning e Multimedia dell'Università di Padova. Sono npito è aiutare le persone con varie attività come per rispondere alle tue domande e assisterti al meglio alcosa!	₽
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Experiment 2

(3 minutes)

Learning video explaining two concepts

Target : Communication students

Submission: Randomly



Real actor (not teacher) and voice and graphics



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Elaborazione verbale

Human voice and graphics



AI Avatar, voice and graphics





4:44 / 11:11



Elaborazione visuale



AI voice and graphics

Study design Participants





Experiment 1

University staff



Experiment 2

Communication students

Study design Procedure



Random assignment



Video viewing



Survey completion

Study design



Questions **1-5 point Likert scale**

(Not at all - Very much)

Le immagini del video hanno facilitato la comprensione? Did the video images helped to understand the content? (1 = Not at all, 5 = Very much so)

Il video ha presentato l'argomento in modo chiaro? Did the video present the topic clearly? (1 = Not at all, 5 = Very much so)

La voce narrante è stata chiara e facile da seguire? Was the main voice clear and easy to follow? (1 = Not at all, 5 = Very much so)



Results - Experiment 1

🔄 Avatar 🔄 Avatar (voice only) 📗 Human (voice only)

Images utility





Images utility





Voice clarity

Results - Experiment 2

Images utility





Voice clarity

Results - Experiment 2

Images utility





Voice clarity

Results - Experiment 2

Images utility



Results

- observed

Clear prediction preference for human is not Clear Narration for all videos Slight Edge for Human Voice with Graphics though (more evident in experiment 1)

Explaining the Results

Video Quality

- High production quality
- across all formats may have
 - minimized differences

Audience Characteristics

University populations may respond

differently than other demographics





Content Complexity

overload

formats

Accessible content reduced cognitive

Digital Familiarity

Participants' comfort with technology increased acceptance of artificial

Theoretical background





Voice principle of Mayer that suggests a preference for natural human voice is confirmed though AI voice and avatar is advancing

Avatar Research

• Zhang, R., & Wu, Q. (2024). Impact of using virtual avatars in educational videos on user experience. Scientific Reports, 14(1), 6592. nature.com

Netland (2024): equivalent learning outcomes



Zhang and Wu's 2024 study on virtual avatars in educational videos published on Nature scientific reports (2024)

More recent studies, such as by Zhang and Wu in 2024, specifically investigating virtual avatars in educational videos, have found that factors like the avatar's expressiveness and the technical quality of the video positively influence learning, emotional experience and user engagement.

Video quality Content difficulty

Factors affecting learning and engagement: • Avatar expressiveness (AI doesn't understand what he's saying)

Future Research Directions



Replicate with larger, more diverse samples.



Incorporate objective learning outcome measures (pre/post tests).





Investigate impact of varying content complexity and types.

Thank you

