

# WINE TASTING IN VIRTUAL REALITY

*A New Type of Senses-Based Learning Experience?*

Roberta Di Palma  
Noah Moonen  
Jonas Heller  
Tim Hilken  
Dai-In Danny Han  
Dominik Mahr



- Department of Marketing and Supply Chain Management, Maastricht University
- Research Centre Future of Food, Zuyd University of Applied Sciences
- Breda University of Applied Sciences
- Centre for Relationship Marketing and Service Management, Hanken School of Economics

# WINE TASTING IN VIRTUAL REALITY

OR WHAT  
EVERY  
ACADEMIC IS  
THINKING  
DURING THE  
CONFERENCE'S  
AFTERNOON  
SESSION...

When is it finally  
Wine-o-Clock?

Red or White  
tonight?

I wish I were in  
Tuscany



## CLOSE YOUR EYES AND IMAGINE

Close your eyes and transport yourself to an idyllic Italian vineyard. Picture yourself reclined amidst verdant hills, bathed in the warm embrace of the Mediterranean sun. Feel the gentle breeze dance across your skin, carrying whispers of fragrant blooms and earthy soil. Listen closely to the harmonious symphony of rustling leaves and chirping birds. With each sip of wine, let the terroir unfold on your palate, a tapestry of flavors weaving together the essence of this enchanting landscape. Taste the sun-kissed grapes, the minerality of the soil, and the timeless beauty that surrounds you in every nuanced note of the wine.







**FIND THIS DIFFICULT?  
HOW TO CLOSE THE IMAGINATION GAP?**



# VIRTUAL REALITY-BASED TRAININGS

User Participation

		User Participation	
		Active (Immersive Interaction)	Passive (Presence)
Skill Training	Academic Skills (Curriculum Focus)	Q4  Actively Training Curriculum Skills (e.g., VR simulated surgery)	Q3  Passively Training Curriculum skills (e.g., touring a warehouse/observing a boardroom meeting)
	Professional Skills (Employability Focus)	Q1  Actively Training Professional Skills (e.g., Training Presentation Skills in VR)	Q2  Passively Training Professional Skills (e.g., nurse simulation training scenarios)

# OUR RESEARCH CONTEXT: SOMMELIER TRAINING



SOMMELIERS PLAY A STRATEGIC KEY ROLE IN MANY (FINE-) DINING EXPERIENCES



SOMMELIER TRAINING IS INHERENTLY A SENSES-BASED LEARNING EXPERIENCE:



EXPERIENCING THE ORIGIN TO DEFINE THE TASTE (IMMERSION)



ARTICULATING & DISCUSSING THE TASTE WITH OTHERS (SOCIAL PRESENCE)



How do immersive experiences impact sommeliers' learning, and which role do immersion and social presence play in this context?

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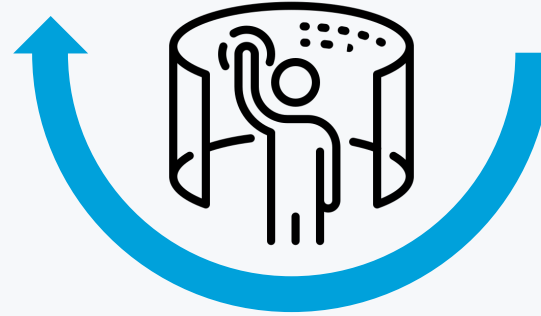
# VIRTUAL REALITY TYPES

## VR HEADSETS



- Wearable device with screens and sensors in front of eyes
- Full 360-degree immersion
- Interactivity & vividness create strong sense of spatial presence
- Motion sickness, isolated experience

## VR CAVES

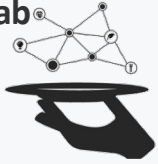


- Cave automatic virtual environment
- Projectors display images on the walls, ceiling, and floor
- Shared experiences that facilitate collaboration and sense of social presence
- Complex setup, less immersive

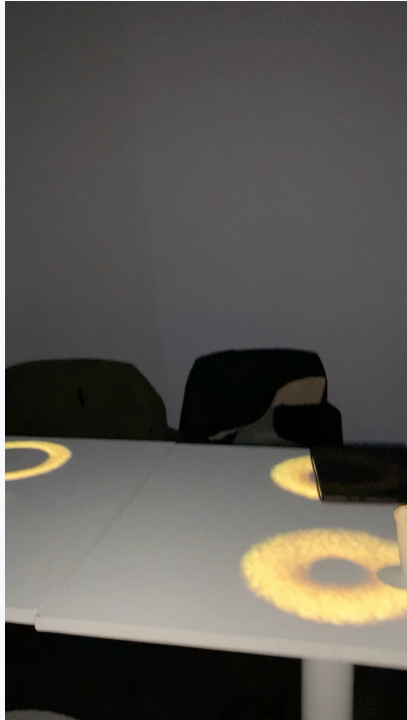
# WHAT IS A CAVE?

## (AND WHY WE REALLY NEED ONE AT SBE)

Food  
Experience  
Lab

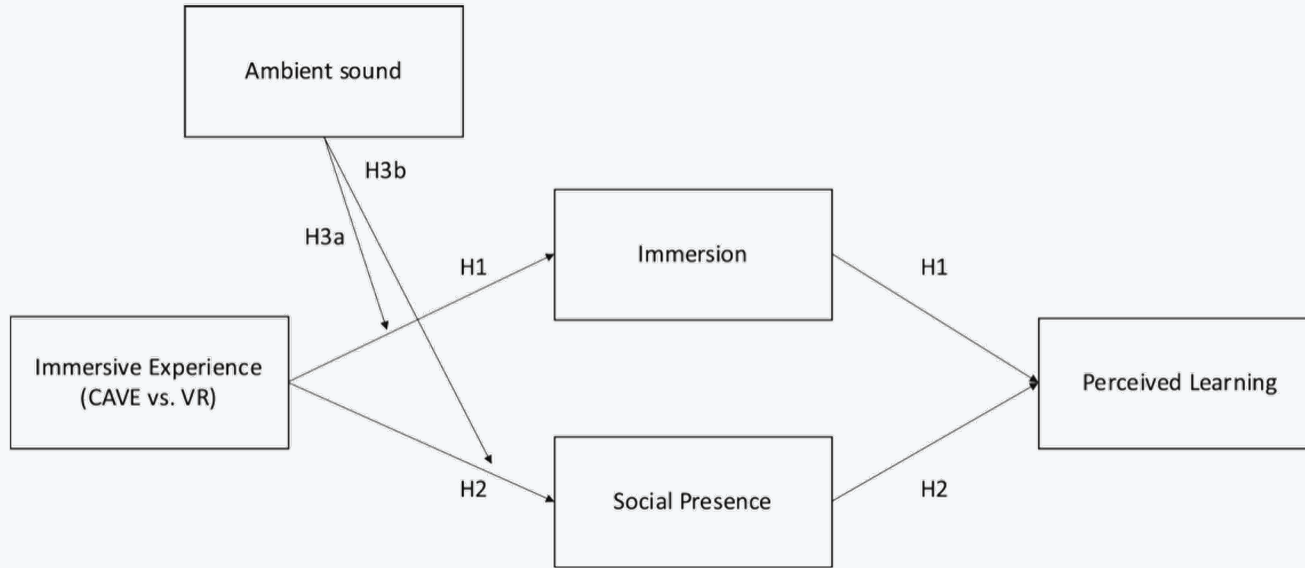


Hotel Management **ZU**  
School Maastricht **YD**





# RESEARCH FRAMEWORK & HYPOTHESES



**H1 & H2:** The effect of VR headsets (vs. CAVEs) on perceived learning is positive and mediated through immersion (vs. Social Presence).

**H3a & b:** Ambient sound moderates these effects, in such a way that the presence (vs. absence) of ambient sound leads to higher levels of immersion and lower levels of social presence

# STUDY DESIGN

- 109 Hotel Management students aged between 18 and 27 years (mean age = 21.5, SD = 1.6, range = 18–27, 55% (60) females, familiar with drinking wine (99.1%))

## VR HEADSET



- Individual experience with 'Oculus Quest 2'

- Collaborative view (360-degree)

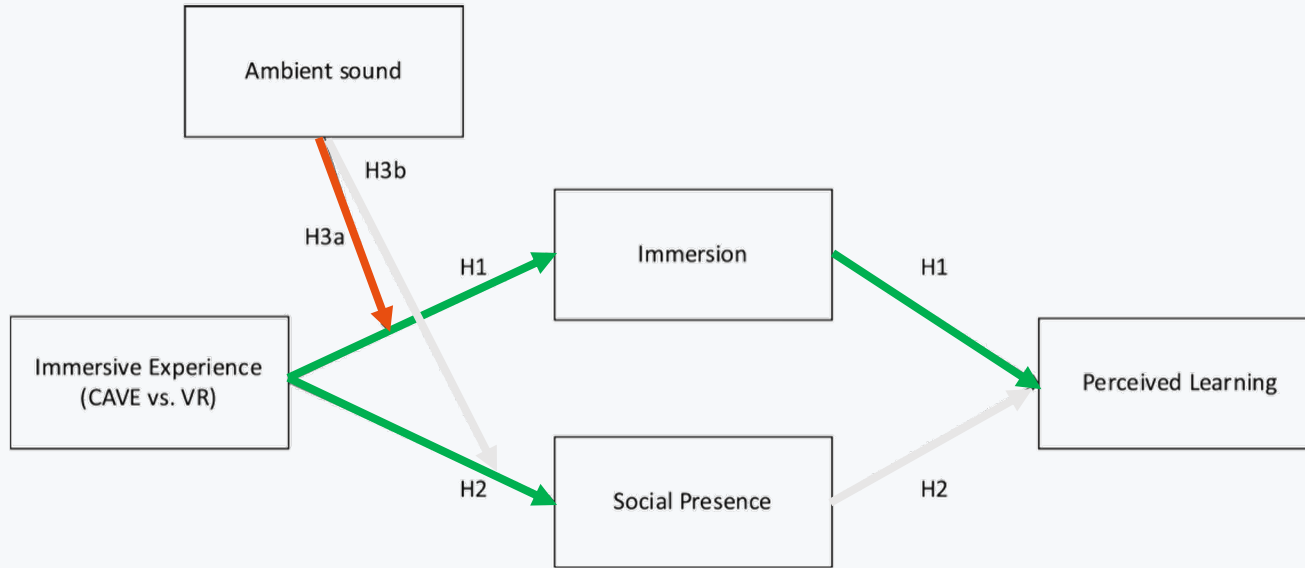
## SURVEY

- Perceived learning
- Social presence
- Level of immersion
- Demographic information

- Sommelier training for 2021 Tavernello Organico Sangiovese Italian red wine from the Emilia-Romagna region.
- All participants could freely roam around the room, communicate with other participants, and taste the wine.



# KEY FINDINGS



- VR headsets enhance immersion but reduce social presence compared to CAVEs.
- VR CAVEs enhance social presence but reduce immersion compared to VR headsets.
- Only Immersion is a significant driver of perceived learning outcomes.
- Ambient sounds *negatively* impacts immersion levels for VR headset users.

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# THEORETICAL & PRACTICAL IMPLICATIONS

1

## Theory

Comparing two main types of VR learning environments (headsets vs. CAVEs)  
Identifying unique mechanism for each VR type (immersion vs. social presence)  
Offer evidence of 'too much' sensory experience in VR learning (taste + visuals + audio)

2

## Practice

Consider which VR type to use depending on desired outcome (immersion vs. social presence)  
Design VR experiences to maximize immersion by minimizing distraction  
Consider the value of adding additional sensory modalities to the experience

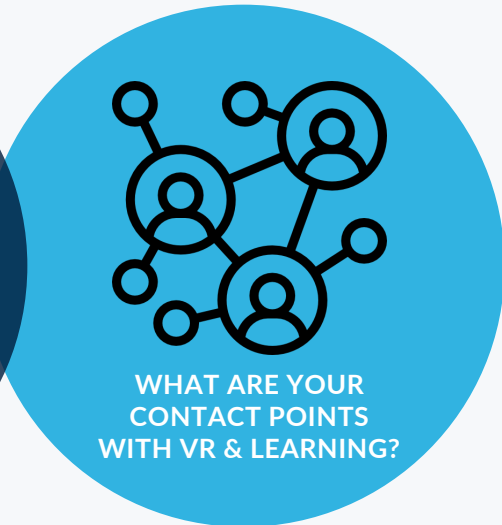
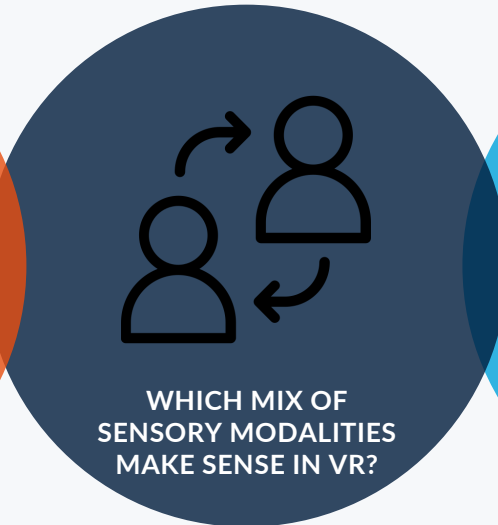
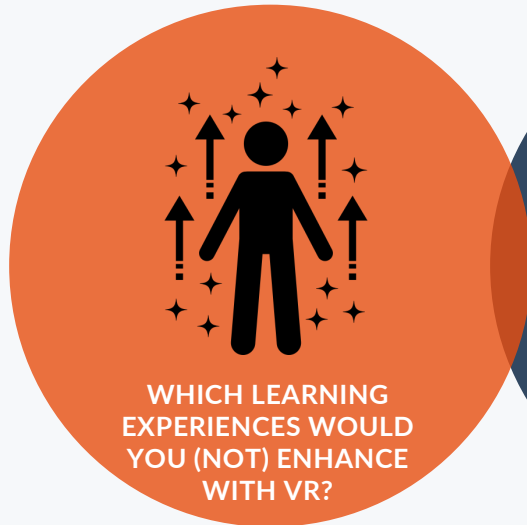
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## Limitations & Future Research

Effects specific to Sommelier training?  
Effects over time and multiple trainings – optimal sequencing of (non-) VR trainings  
Better measure of learning effectiveness

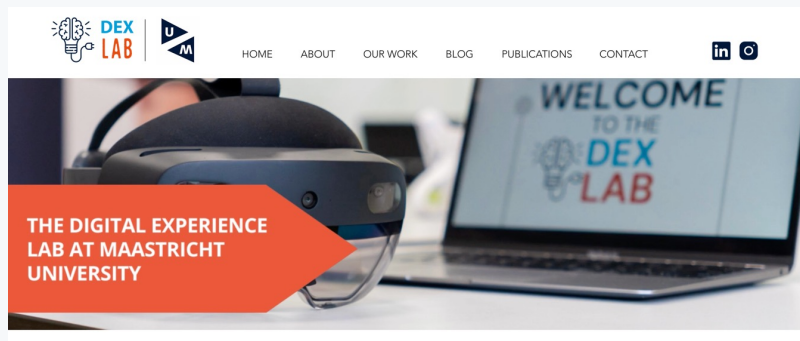
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# TIME FOR QUESTIONS & DISCUSSION





# THANK YOU



[www.sbe-dexlab.com](http://www.sbe-dexlab.com)



[sbe-dexlab@maastrichtuniversity.nl](mailto:sbe-dexlab@maastrichtuniversity.nl)



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