Exploring **primary school** trainee teachers' **perceptions of virtual reality** as a **pedagogical tool** for English language learning



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activité > connaissance
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Background studies

VR is a natural interactional environment…

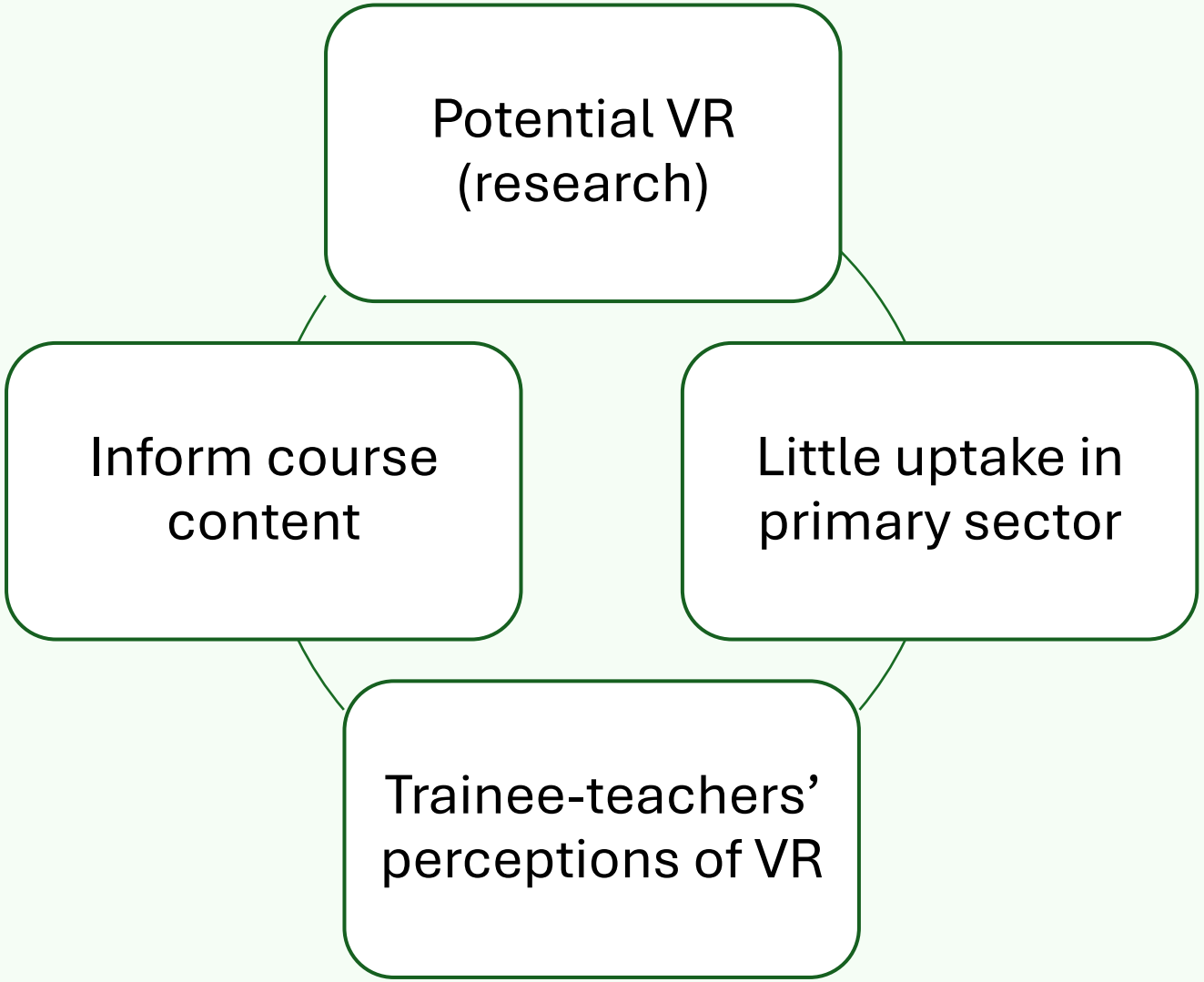
(Enkin, 2022; Jauregi, Canto & Wigham, in press)

…that enhances

- motivation
- engagement
- vocabulary acquisition
- oral skills
- collaboration

(Acar & Cavas, 2020; Chun et al., 2022; Dooly, Thrasher, & Sadler, 2023, Gruber & Kaplan-Rakowski, 2021; Parmaxi, 2020; Tai et al., 2022)

Study rationale

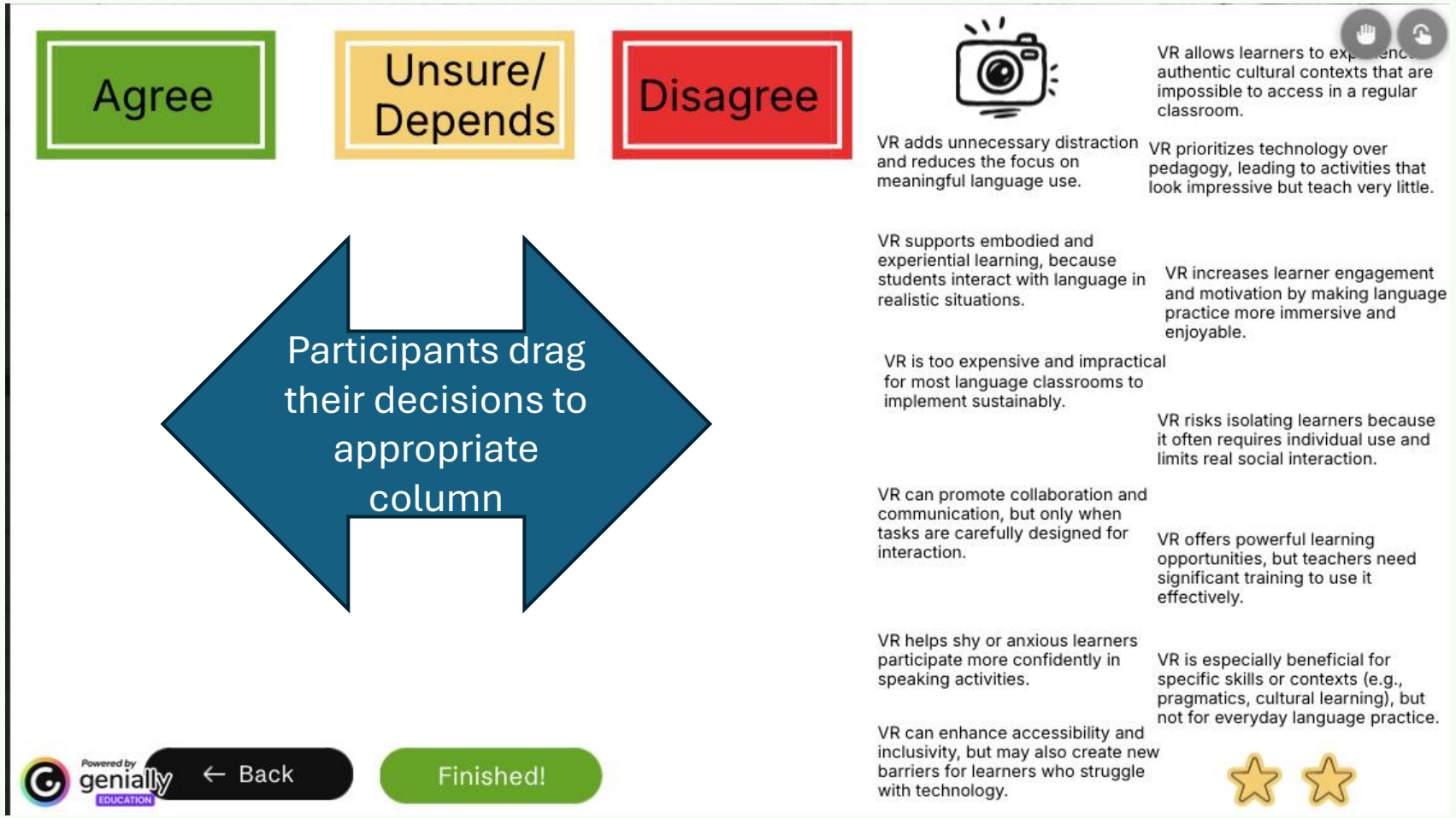


What **perceptions** do Spanish and French **primary trainee teachers** hold regarding **VR for English L2 learning**?

uses, benefits, constraints, and implications

Data collection and methods

Statement-sorting discussions



- Small discussion groups (3-4)
- Audio recordings and screenshots (discussions as they negotiate)
- Adapted Q methodology : forced distribution of 12 statements across 3 categories (4 per category)

Trainee-teacher participants

	UAB, Spain	UCA, France
Course	4th year undergraduates : Primary education	Master's: primary education
Participants	24 females; 2 males	13 females
Groups & recordings	6 groups: 5-29 minutes	4 groups : 14-17 minutes

- Random group composition
- Informed consent : UAB ethic's committee (UAB-CERec459)

Q-methodology analysis

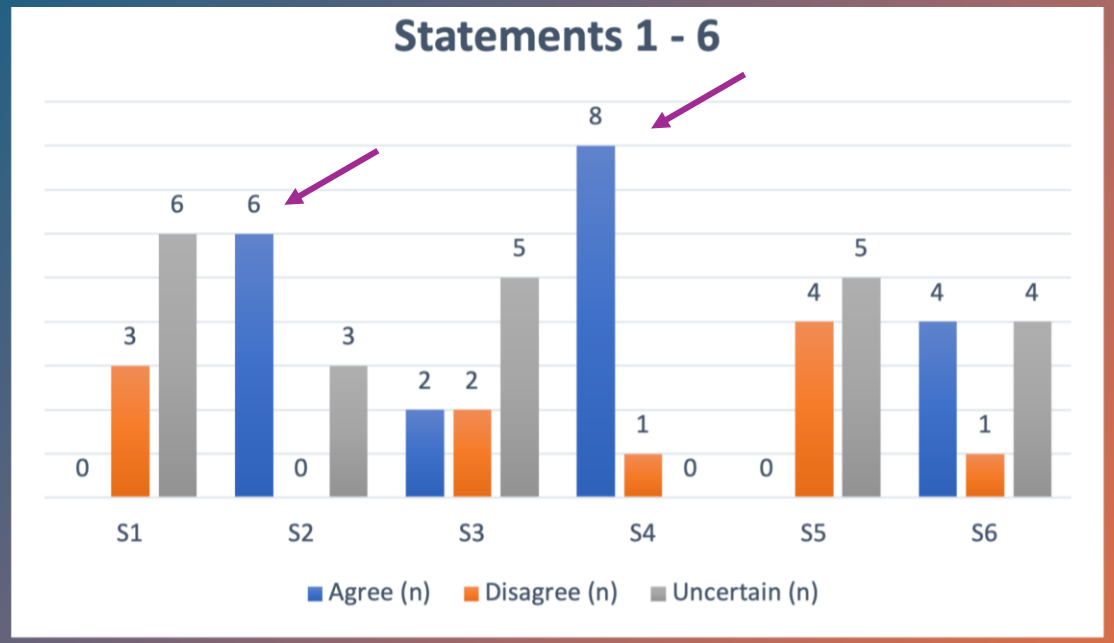
		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
UAB	G1	Uncertain	Agree	Uncertain	Agree	Disagree	Uncertain	Agree	Disagree	Uncertain	Disagree	Agree	Disagree
	G2	Uncertain	Uncertain	Disagree	Agree	Uncertain	Uncertain	Agree	Disagree	Agree	Disagree	Agree	Disagree
	G3	Disagree	Agree	Uncertain	Agree	Uncertain	Uncertain	Disagree	Disagree	Agree	Uncertain	Agree	Disagree
	G4	Disagree	Agree	Uncertain	Agree	Uncertain	Agree	Uncertain	Disagree	Uncertain	Disagree	Agree	Disagree
	G5	Disagree	Agree	Agree	Disagree	Disagree	Uncertain	Uncertain	Disagree	Uncertain	Agree	Agree	Uncertain
	G6	Uncertain	Uncertain	Disagree	Agree	Uncertain	Disagree	Agree	Disagree	Agree	Uncertain	Agree	Disagree
UCA	G1	Uncertain	Uncertain	Uncertain	Agree	Disagree	Agree	Uncertain	Disagree	Agree	Disagree	Agree	Disagree
	G2	Uncertain	Agree	Agree	Agree	Uncertain	Agree	Disagree	Disagree	Uncertain	Disagree	Uncertain	Disagree
	G3	Uncertain	Agree	Uncertain	Agree	Disagree	Agree	Uncertain	Disagree	Uncertain	Disagree	Agree	Disagree

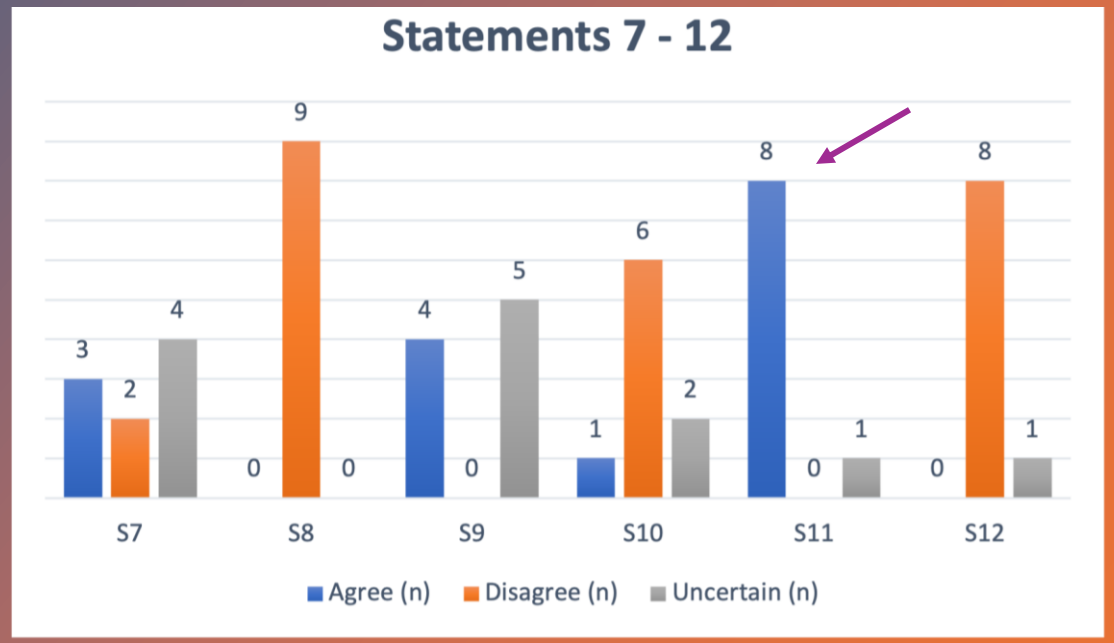
Categorical allocations made by groups

Identify:

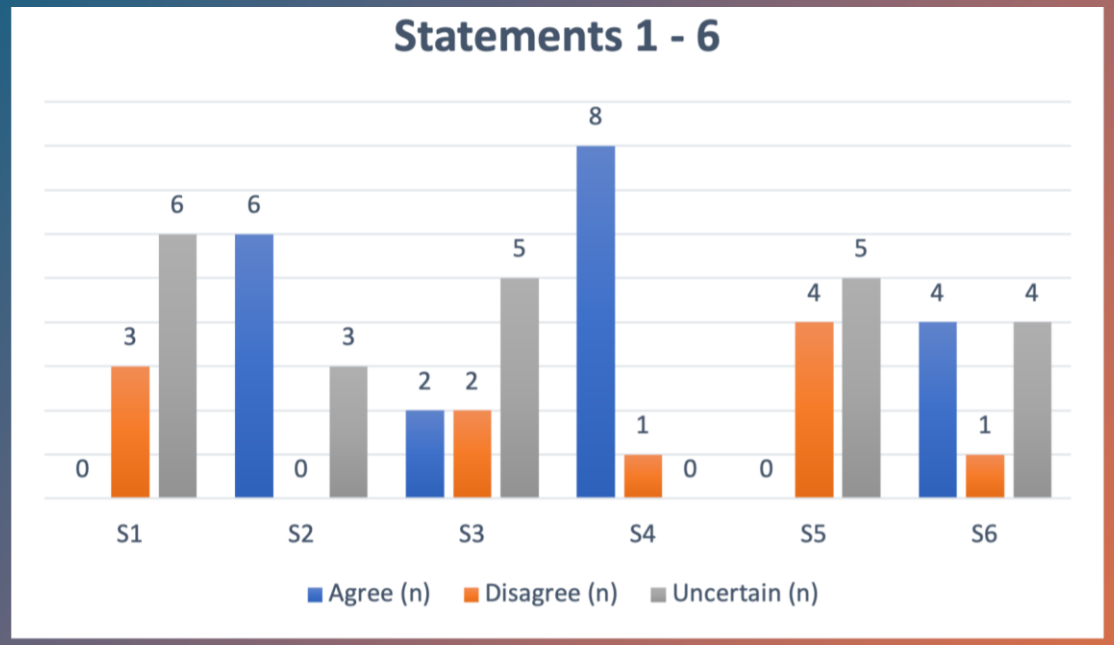
- Strong collective agreement statements
- Strong disagreement statements
- Uncertainty or context-dependent

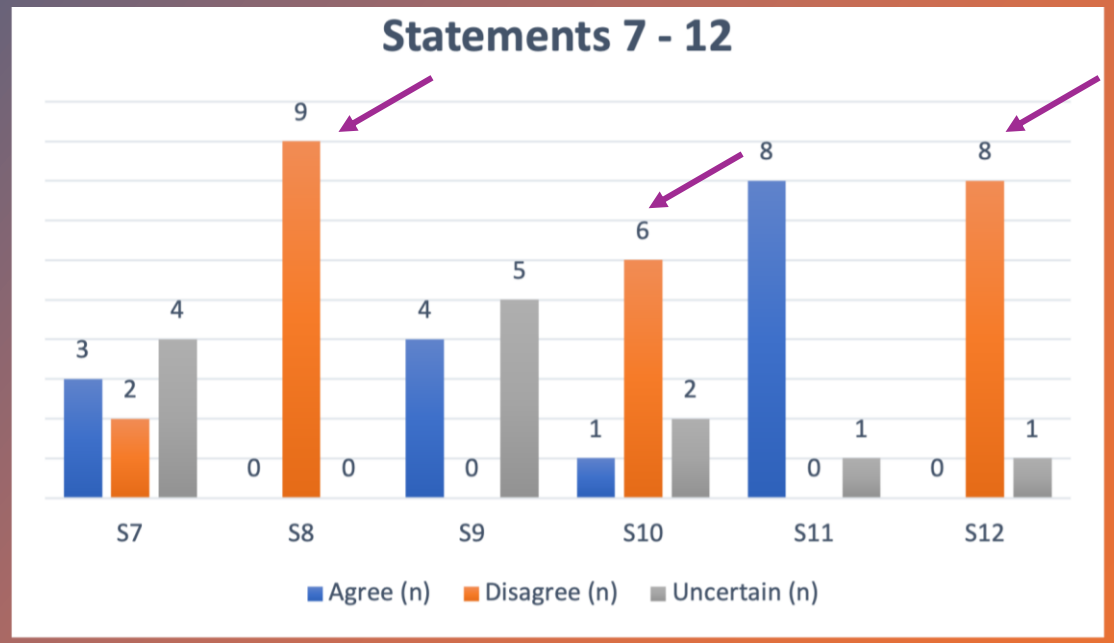
Results: Collectively agree





- S4: VR can promote collaboration and communication, **but only when tasks are carefully designed** for interaction. n = 8 (88.9%)
- S11: VR offers powerful learning opportunities, **but teachers need significant training** to use it effectively. n = 8 (88.9%)
- S6: VR can enhance accessibility and inclusivity, but **may also create new barriers for learners** who struggle with technology. n = 6 (66.7%)

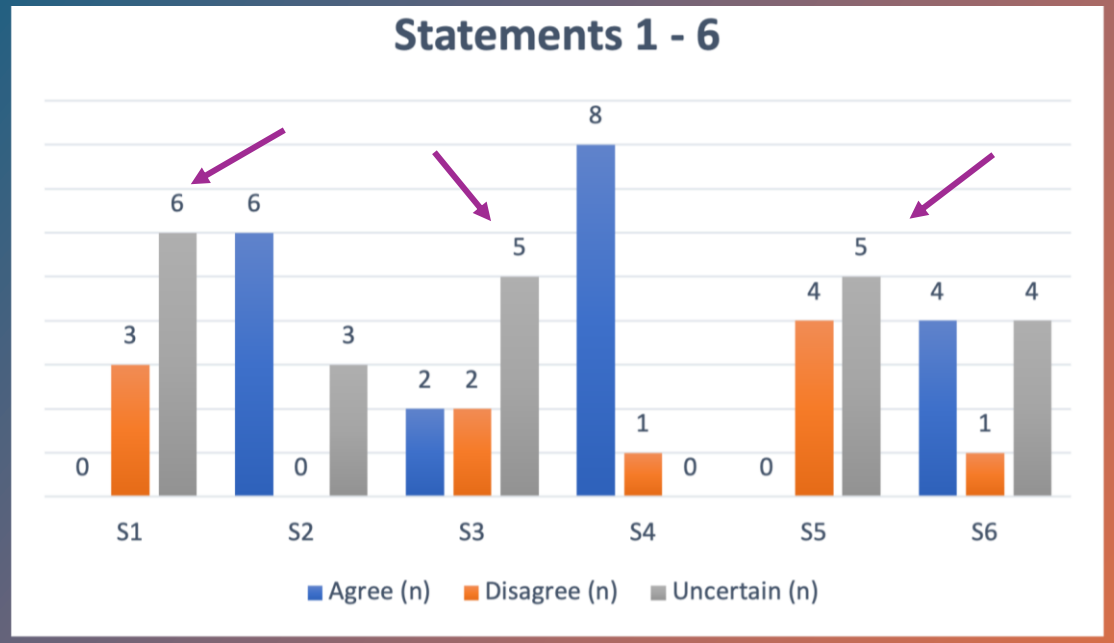


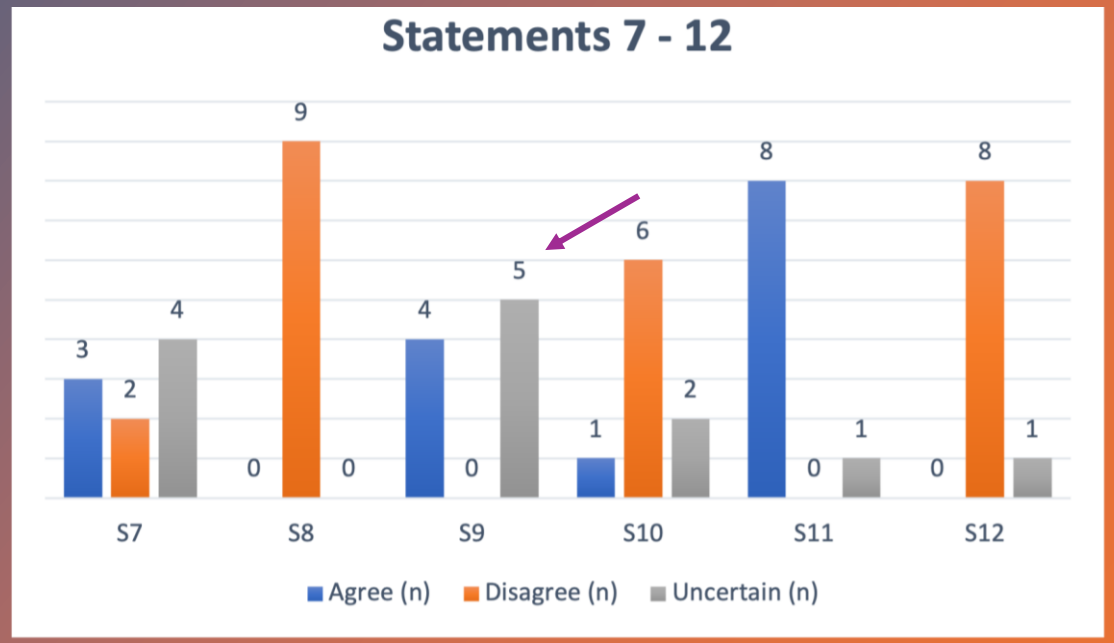


Results: Collectively disagree

- S8: VR prioritizes technology over pedagogy, leading to **activities that look impressive but teach very little**. n = 9 (100%) *(**Can** be used to teach)*
- S12: VR is especially beneficial for specific skills or contexts (e.g., pragmatics, cultural learning), but **not for everyday language practice.** n = 8 (88.9%) *(**Can** promote language learning)*
- S10: VR **risks isolating learners** because it often requires individual use and limits real social interaction. n = 6 (66.7%) *(**Doesn't** necessarily **limit** social interaction)*

Results: Unsure/depends (more variability)





- S1: VR **adds unnecessary distraction** and reduces the focus on meaningful language use. 6 (66.7%)
- S3: VR **is too expensive and impractical** for most language classrooms to implement sustainably. n = 5 (55.6%)
- S5: VR **helps shy or anxious learners** participate more confidently in speaking activities. n = 5 (55.6%)
- S9: VR **increases learner engagement and motivation** by making language practice more immersive and enjoyable. n = 5 (55.6%)

Teacher as ‘architect’

VR’s effectiveness is entirely contingent upon the teacher’s intervention and task design

~~« magic bullet »~~

~~« super textbook »~~

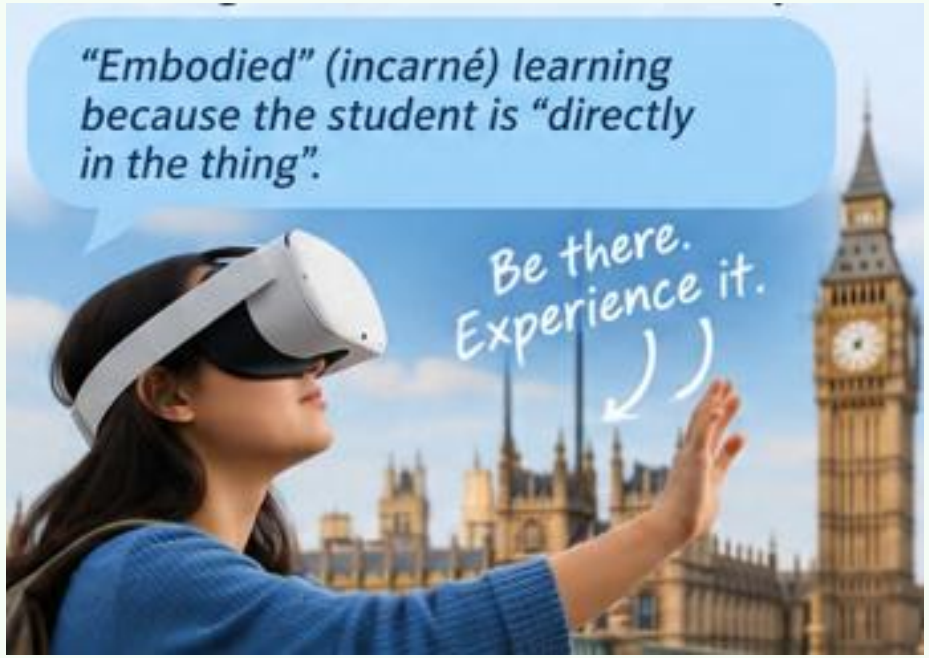
« it depends »
as a categorical nuance

Careful design of **tasks** for interaction

Risk of technology over pedagogy

Immersion-Isolation

Participants recognise a fundamental tension: VR provides unparalleled immersion whilst simultaneously risking the social isolation of the learner



versus



Proposed Mitigation

A hybrid model of collective debriefing to reintegrate the virtual activity into a social language-learning context.

Shy learner paradox

Empowerment or retreat?

Anonymity as a strength :
« shy or anxious learners participate more confidently»

less « pressure of an audience»

less afraid to « look stupid»

« comfort them in their shyness » : excuse to withdraw from ‘real’ interaction

Institutional realities & barriers

Practical feasibility scrutinized: budget, space, learner safety

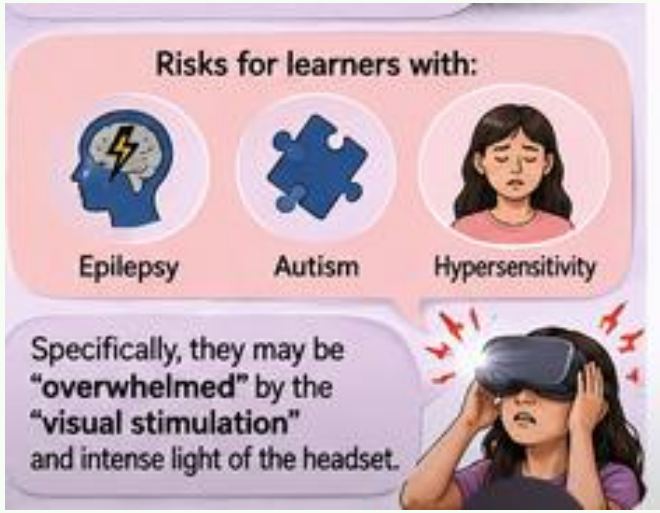
« the **abominable** cost »

« **impractical** » in a standard classroom

« **new barriers** through the virtual simulation »







Motivation versus novelty effect

A critical distinction between « fun » and « meaningful learning »

« an **unnecessary distraction** »

Preoccupied with « **discovering the object** »



Proposed Mitigation

Hardware discovery session

Sustainable motivation: used spontaneously and purposefully

A high-potential but high-maintenance tool

Need to move beyond the 'wow' factor

- Rigorous **teacher training** in pedagogical VR design
- **Hybrid task design** that links individual immersion to group collaboration
- Contextualised **safety protocols** addressing sensory sensitivies and physical classroom space
- Strategic budgeting to prioritise **sustainable use** over impressive but isolated technological displays

Group comparison

Dimension	UAB	UCA
Teacher as architect	Success hinges on lesson structure and pragmatic lesson execution	Teacher training deficit and time issues
Immersion vs isolation	Connectivity (borders, sister classrooms, shared screen projection)	Sensory and social barriers
Shy learner paradox	Avatar-mediated confidence	Physical audience awareness
Institutional realities and barriers	General technical constraints	Repair and upkeep Medical/sensory

Takeaways

An emerging developmental trajectory useful for future teacher training

- VR seen through either
  - an instructional/action-oriented lens ….*or…*
  - a critical / sociological lens

Objective-first planning
Phased-lesson sequence planning (debriefings)

Inclusive pedagogy

Collaborative VR tasks: shared goals, station-based rotation, screen mirroring

Tool discover / language tasks
Scalable alternatives
Contingency planning

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Thank you





Feel free to get in touch!

Many thanks to our study participants.

References

Acar, A. & Cavas, B. (2020). The effect of virtual reality enhanced learning environment on the 7th-grade students' reading and writing skills in English. *Malaysian Online Journal of Educational Sciences*, 8(4), 22-33. http://mojes.um.edu.my/EISSN:2289-3024

Chun, D.M., Karimi, H. & Sañosa, D.J. (2022). Traveling by headset: Immersive VR for language learning. *CALICO Journal*, 39(2), 129–149. https://doi.org/10.1558/cj.21306

Dooly, M., Thrasher, T., & Sadler, R. (2023). "'Whoa! Incredible!': Language learning experiences in Virtual Reality", *RELC Journal, SI: Teaching with Technology in the Post-Pandemic Digital Age, 54*(2), 1-19. DOI: 10.1177/00336882231167610.

Enkin, E. (2022). Comparing two worlds: Spanish learners' face-to-face and immersive social VR speaking experience. *Computer Assisted Language Learning Electronic Journal (CALL-EJ),* 23(1), 22-42. https://old.callej.org/journal/23-1/Enkin2022.pdf

Gruber, A. & Kaplan-Rakowski, R. (2021). The impact of high-immersion virtual reality on foreign lan-guage anxiety when speaking in public. *SSRN*. http://dx.doi.org/10.2139/ssrn.3882215

Jauregi-Ondarra, K., Canto, S. & Wigham, C.R. (in press). Embracing the Future: Virtual Exchange through the Lens of Virtual Reality. In Hauck, M. & Satar, M. (Eds). *Handbook of Virtual Exchange in Global Education*. Routledge.

Parmaxi, A. (2020). Virtual reality in language learning: a systematic review and implications for re-search and practice. *Interactive Learning Environments*, 31(1),1-13. https://doi.org/10.1080/10494820.2020.1765392

Tai, T-Y, Chen, H. H-J & Todd, G. (2022). The impact of a virtual reality app on adolescent EFL learners' vocabulary learning. *Computer Assisted Language Learning*, 35(4), 892-917. https://doi.org/10.1080/09588221.2020.1752735