Subtitles in 360º video

Results from an eye-tracking experiment

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In this presentation

1. Challenges for VR 360º subtitles

2. Testing VR 360º with users

3. Conclusions and further steps

Challenges for VR 360º subtitles

2D VS immersive subtitles

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2D		Immersive

- Presentation modes for subtitles
- (Re-)presentation of non-speech information
- Text fonts, sizes and background
- Reading speed and characters per subtitle frame

- Positioning of subtitles and rendering areas in the 360º sphere
- Minimizing blocking effects
- Maximizing readability and minimizing VR dizziness
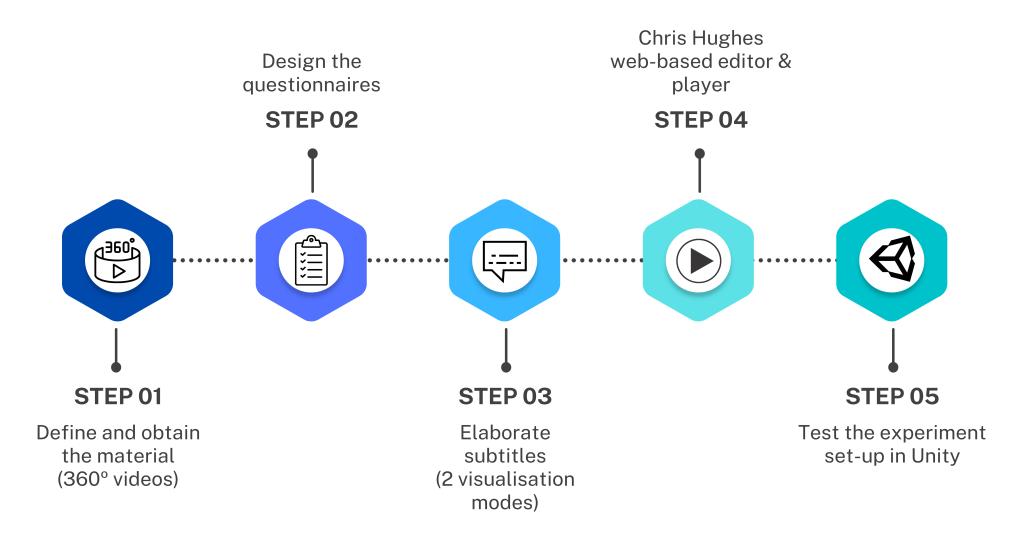- Guiding methods
- Character identification

Testing VR 360º subtitles with users

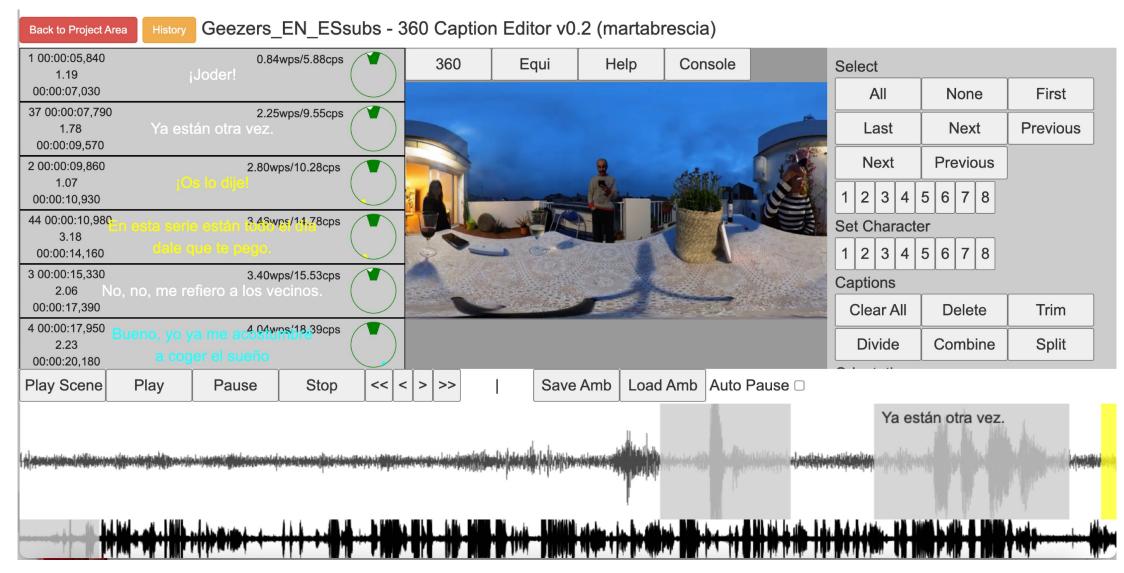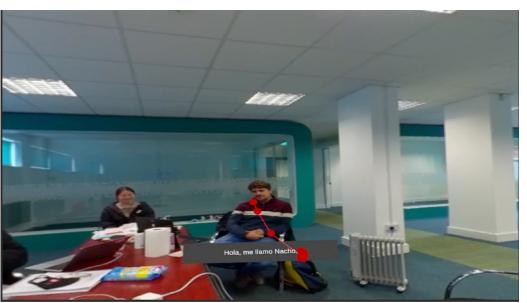Experimental design, data collection, and data analysis

Experimental design

Design the
questionnaires

STEP 02

Chris Hughes
web-based editor &
player

STEP 04

STEP 01

Define and obtain
the material
(360° videos)

STEP 03

Elaborate
subtitles
(2 visualisation
modes)

STEP 05

Test the experiment
set-up in Unity

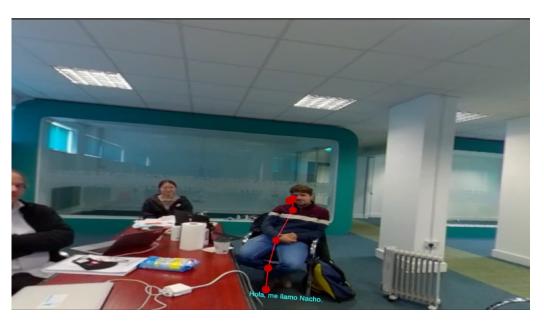# Adding subtitles to 360º video

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2x2x2 design

➢ 2 videos

  ➢ "Vacations" video

  ➢ "TRACTION" video

➢ 2 subtitle position

  ➢ Head-locked

  ➢ Fixed

➢ 2 colour

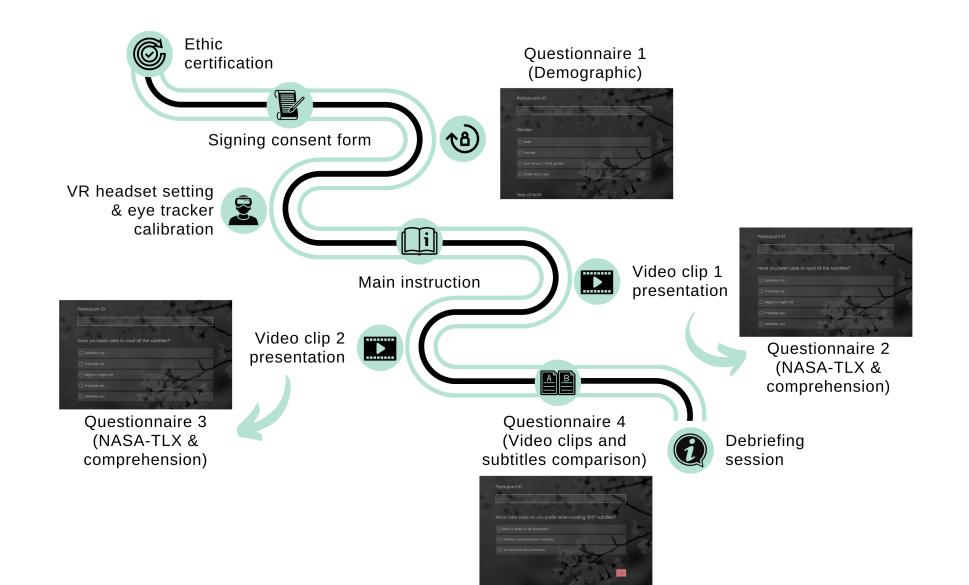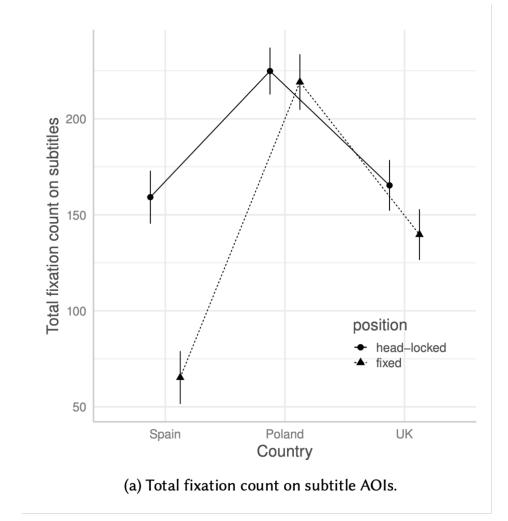 ➢ B&W for all the speakers

  ➢ Unique color for each speaker

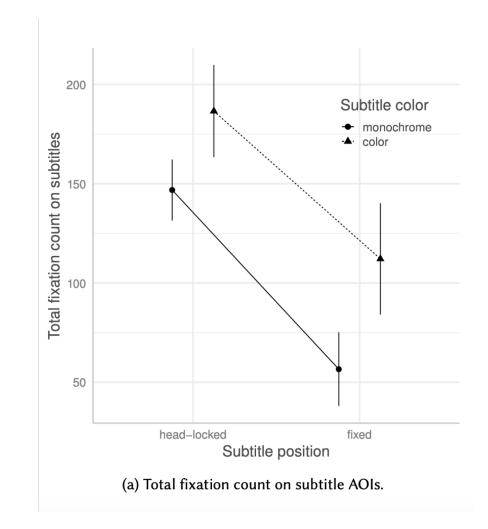# Data collection method

Data analysis: subtitle position

(a) Total fixation count on subtitle AOIs.

Data analysis: subtitle colour

(a) Total fixation count on subtitle AOIs.

Conclusions and further steps

Conclusions

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User tests yield limited results… Unless you can put a **working product** in front of them

➢ Paper prototypes may cause confusion

➢ Often lead to **users saying they prefer what they already have**
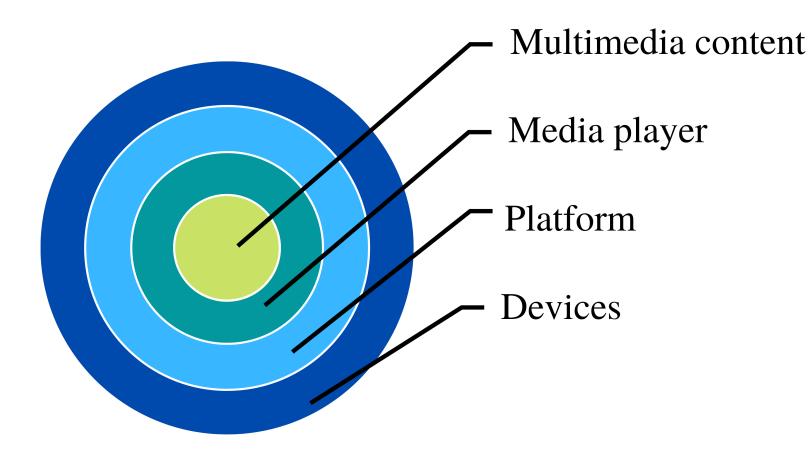
In this area many **technologies pose a learning challenge**

➢ Difficult to ask a user to evaluate prototype when learning

Need to **combine questionnaires and/or focus groups with new techniques like eye tracking** to measure user behavior

Conclusions

Multimedia content

Media player

Platform

Devices

+ translation

New avenues for XR accessibility

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McDonagh, S., & Brescia-Zapata, M. (2023). Combining XR, accessibility, and sustainability in the classroom: Results of an exploratory study. *Bridging the XR technology to practice gap, 1.*

Thanks for your attention!

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