

Augmented Reality Experiences with Project North Star: Pilot Iterative Design TOPIC GUIDE FOR INTERVIEW

This topic guide takes some of its pointers from Katy Tcha-Tokey and collaborators' paper: "Proposition and Validation of a Questionnaire to Measure the User Experience in Immersive Virtual Environments" (Tcha-Tokey et al., 2016), which although tailored for Virtual Reality experiences, can be drawn from and modified to survey experience of Augmented Reality too. The appendix of the paper includes the full translated 68 questions.

Starting with the introductory questions of:

1. What were some positive aspects about your experience in the environment?
2. What were some negative aspects about your experience in the environment?
3. Do you have any other suggestions to improve this augmented reality environment or the experience in general?

I will follow the experience remarks given by the participant and guide the conversation and questions towards the following general areas:

- Presence (e.g. 15. *Can you correctly localise sounds being produced by the augmented environment?*)
- Immersion (e.g. 16. *Do you feel stimulated by the augmented environment?*)
- Engagement (e.g. 6. *How compelling is the sense of moving around inside the augmented environment?*)
- Flow (e.g. 23. *Do you feel like you can control your actions?*)
- Skill (e.g. 53. *How confident do you feel moving items in this augmented environment?*)
- Emotion (e.g. 37. *Are you enjoying being inside this augmented environment?*)
- Experience Consequence (e.g. 62. *Did you suffer from fatigue during your interaction?*)
- Judgement (e.g. 58. *Would you say that the environment is unruly or manageable?*)
- Technology Adoption (e.g. 72. *How difficult would it be for you to become skilful at this environment?*)

Bibliography

Tcha-Tokey, K., Christmann, O., Loup-Escande, E., & Richir, S. (2016). Proposition and Validation of a Questionnaire to Measure the User Experience in Immersive Virtual Environments. *International Journal of Virtual Reality*, 16(1), 33–48. <https://doi.org/10.20870/IJVR.2016.16.1.2880>

Appendix

Modified questions from the Questionnaire for User Experience in Immersive Virtual Environments

Presence

- My interactions with the virtual environment seemed natural.
- The devices which controlled my movement in the virtual environment seemed natural.
- I could actively survey the virtual environment using vision.
- I could examine objects closely.
- I could examine objects from multiple viewpoints.
- I felt proficient in moving and interacting with the virtual environment at the end of the experience.
- I could concentrate on the content of the experience rather than on the headset itself.
- I correctly localized sounds produced by the virtual environment.

Engagement

- The visual aspects of the virtual environment involved me.
- The auditory aspects of the virtual environment involved me.
- The sense of moving around inside the virtual environment was compelling.
- I was involved in the virtual environment experience.

Immersion

- I felt stimulated by the virtual environment.
- I become so involved in the virtual environment that I was not aware of things happening around me.
- I felt physically fit in the virtual environment.
- I became so involved in the virtual environment that I lost all track of time.

Flow

- I felt I could perfectly control my actions.
- At each step, I knew what to do.
- I felt I controlled the situation.
- Time seemed to flow differently than usual.
- Time seemed to speed up.
- I was losing the sense of time.
- I was not worried about what other people would think of me.
- I felt I was experiencing an exciting moment.
- This experience was giving me a great sense of well-being
- When I mention the experience in the virtual environment, I feel emotions I would like to share.

Emotion

- I enjoyed being in this virtual environment.
- It was so exciting that I could stay in the virtual environment for hours.
- I enjoyed the experience so much that I feel energized.
- I felt nervous in the virtual environment.
- I felt like distracting myself in order to reduce my anxiety.
- I found my mind wandering while I was in the virtual environment.
- The interaction devices (headset and headphones) bored me to death.
- When my actions were going well, it gave me a rush.
- While using the interaction devices (headset and headphones), I felt like time was dragging.
- I enjoyed the challenge of learning the virtual reality interaction devices (headset and headphones)
- I enjoyed dealing with the interaction devices (headset and headphones).

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Skill

- I felt confident interacting with objects in the virtual environment.
- I felt confident keeping my hands tracked (outline) around the virtual environment.
- I feel confident understanding the terms/words relating to the interaction devices (headset and headphones).
- I feel confident learning advanced skills within a specific augmented reality experience using these devices.
- I feel confident describing the functions the interaction devices (headset and headphones).

Judgement

- Did you find the virtual environment impractical/practical
- Did you find the virtual environment confusing/clear
- Did you find the virtual environment unruly/manageable
- Did you find the virtual environment lame/exciting
- Did you find the virtual environment amateurish/professional
- Did you find the virtual environment gaudy/classy
- Did you find the virtual environment unpresentable/presentable
- Did you find the virtual environment ugly/beautiful
- Did you find the virtual environment disagreeable/likeable

Experience Consequence

- I suffered from fatigue.
- I suffered from headache.
- I suffered from eyestrain.
- I felt an increase of my salivation during my interactions.
- I suffered from nausea during my interactions.
- I suffered from heaviness in my head during my interactions.
- I suffered from dizziness during my interactions.
- I suffered from vertigo during my interactions.

Technology Adoption

- If I use again the same virtual environment, my interaction with the environment would be clear and understandable for me.
- It would be easy for me to become skillful at using the virtual environment.
- Learning to operate the virtual environment would be easy for me.
- Using the interaction devices (headset and headphones) is a bad idea.
- The interaction devices (headset and headphones) would make audiovisual art more interesting.
- I would like to work with the interaction devices (headset and headphones).
- I have the resources necessary to use the interaction devices (headset and headphones).