

VIRTUAL REALITY (VR) in sensory testing: rating of products depends on VR-context

BACKGROUND

In current science and practice, there are many attempts to dissolve the tension between internal and external validity by implementing sensory product testing in a virtual test environment. During testing in a lab booth, video and audio stimuli in Virtual Reality (VR) should be used to make a usage situation tangible to the participants. But in advance there are important aspects to consider: Which scenario should be shown? Does it affect the ratings?

MAIN OBJECTIVES



The present study -a sniff test- deals with Oculus VR-glasses, showing an authentic use case of the product being tested.

The technical implementation was self-realized by filming 360°-videos and providing an integrated questionnaire. As the participants look around and smell the product, all further instructions have been placed into it and the setting allows answering the questions directly in VR-glasses by using the controller.

The aim of this research project was to prove an order effect in product ratings:

It is assumed that the order of products changes depending on the scenario being shown in VR.

- » Product A is better rated in the (matching) virtual reality context A;
- » by contrast product B receives significantly better rating in the (matching) context B.

TEST DESIGN

It aims at comparing the sensory acceptance of two floor cleaners with different benefits in two different usage situations. The products have been selected due to their different positioning in the motive system. We also had to think of two virtual reality scenarios to create a different smell experience depending on what was shown in VR-glasses. Only participants with a higher intensity of using these kind of products took part.

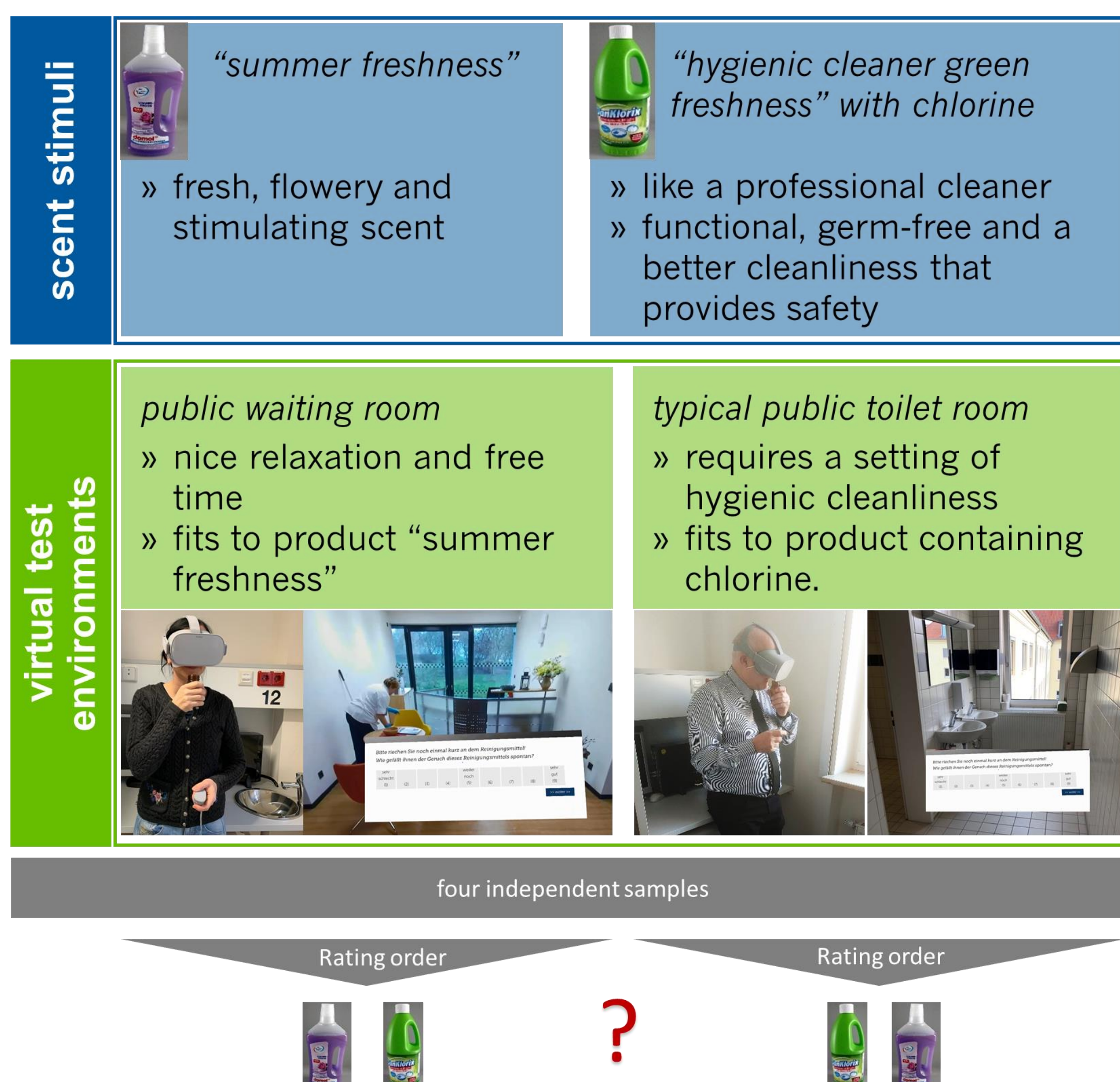


Figure 1: Test Design

RESULTS

We could find an indication of an order effect. The specific application of the floor cleaners shown in virtual reality influences the rating of the product-context-fit. The intended benefit partly determines the smell of a product, thus consumer's liking becomes more evident in a concrete usage context instead of no scenario given during traditional sniff tests in sensory lab. Participants experienced testing in VR more realistic according to the evaluation task.

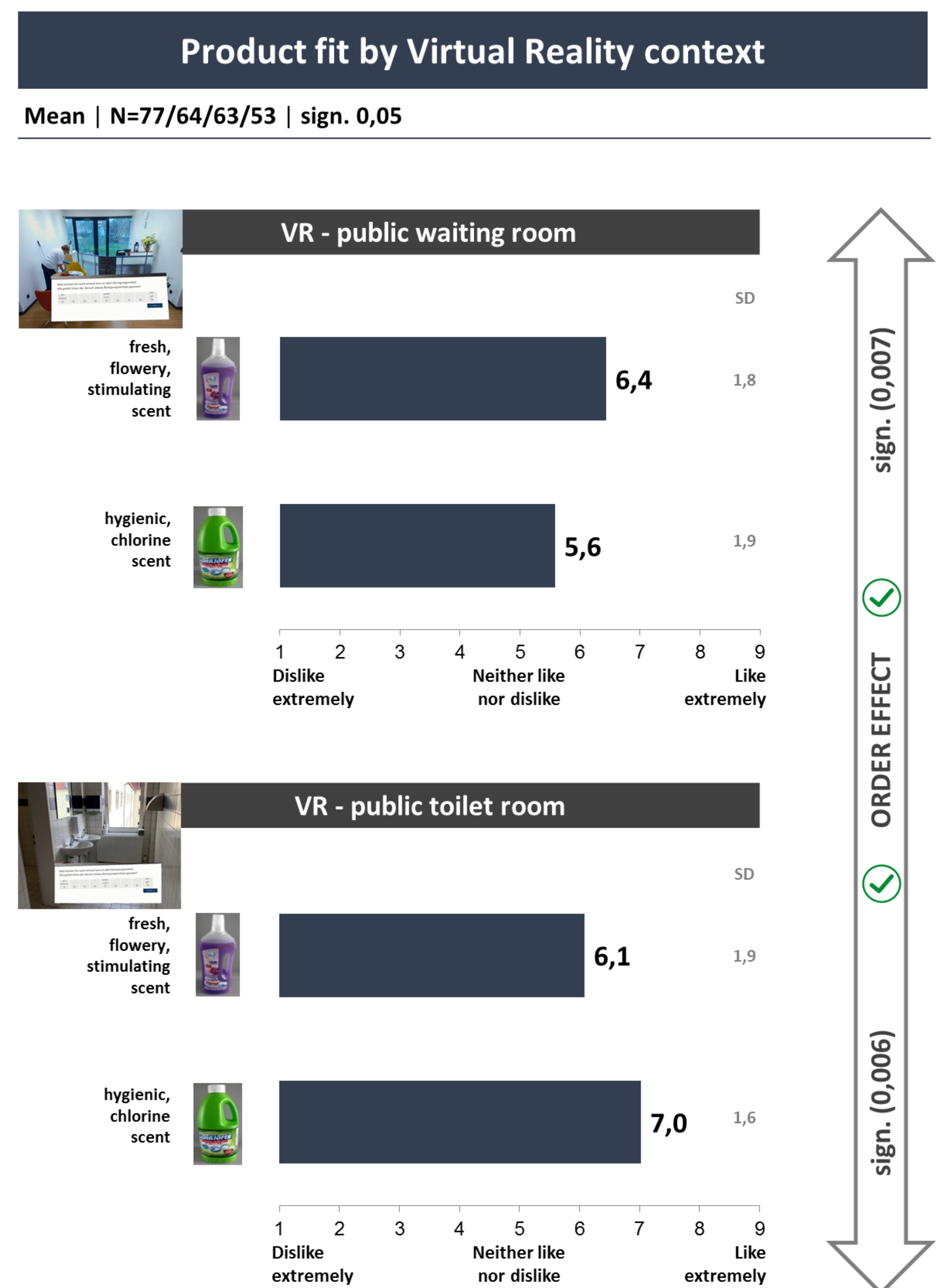


Figure 2: Results concerning order effect

CONCLUSION

Summarizing it is important to pay attention to the interaction between virtual reality contexts and products when thinking about test design using VR. With our project, we were able to show the structure of how a research at the laboratory combined with VR-technology might look like.

Retrospectively we also have succeeded in self-creating VR-content with our common sensory questionnaire software to be independent and without any technical supporting struggle in the lab during data collection.

Furthermore, participants reported positive feedback concerning the usability of VR-glasses combined with questioning/evaluation tasks during the test.

Now we have a viable and affordable solution in VR-software for future tests, in order to verify the here presented findings.

