IMPROVING CRAFTSMEN BEHAVIOUR THROUGH VIRTUAL REALITY

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A collaboration between MNEXT at Avans, TU Delft and Mateboer Groep B.V. has been started to investigate how to effectively affect and improve the behavior of craftsmen during renovation projects. In these projects, residents are not relocated but instead continue to live in their homes. They are therefore subject to disturbances caused by demolition and the installation of energy-saving materials and devices.

Scaffolded home during renovation

Front of typical modeled Dutch residence

PREVIOUSLY

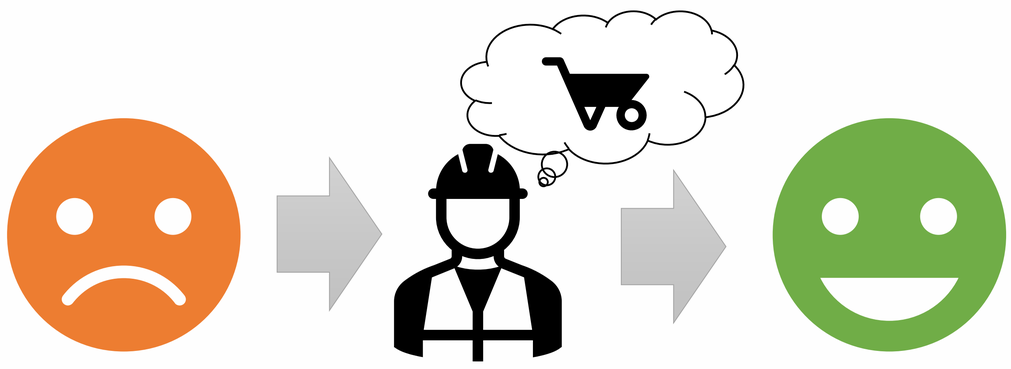
In earlier research, Virtual Reality was used to prepare residents for future disturbances they would experience during renovation work. Virtual Reality was also used to show them how their new and improved home would look. This significantly increased residents' acceptance of modifications to their home and lowered the volume of complaints to the renovator. (Oel, et al., 2023) Residents still report some complaints, however, many of which stem from interaction with the craftsmen before, during or after their scheduled work.

Can we decrease the frequency and impact of perceived nuisances while improving relations between craftsmen and residents using a similar Virtual Reality environment?

CREATING A FUN AND EFFECTIVE BEHAVIOURAL TRAINING

We attempt to expand on software previously created that already contains semi-realistic models of residences of the type that craftsmen in the Netherlands may regularly encounter. In these models, training models will be provided through which craftsmen can be instructed on behavior during renovations.

To affect these behavioral changes, situations that arise often were selected to be modelled. In these lessons, we will attempt to elicit an emotional response, while giving craftsmen a chance to experience the consequences of their actions and reevaluate how they approach situations involving residents and their homes.



Using residents' emotional reaction to nuisances could stimulate craftsmen to re-consider those people;s interests during their work

PROJECT EXPECTATIONS

MNEXT provides expertise in software development to create a solid foundation. We expect to model the high impact situations and create a software proof of concept that can be used in field tests by Mateboer and TU Delft. The focus will be on maintainable, well-documented software that is acceptable for the craftsmen and their instructors, who are the end users of the system.

The project is expected to conclude in April 2024. After this projects' conclusion, the software product will be integrated into renovation processes and it's effectiveness evaluated by Mateboer and TU Delft.

Model of an attic during renovation

Model of a bathroom during renovation

References

Oel, C. v., Mukhtar, H., Benning, C., Freeke, A., Zuiderveld, D., Eiseman, E., & Koolwijk, J. (2023). Sociale innovatie door communicatie in Virtual Reality (VR).