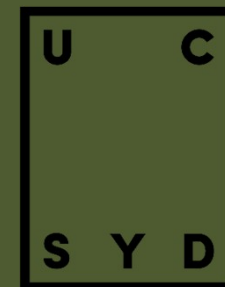


Co-creation of a virtual reality alcohol prevention app – another way of gaining health literacy ?

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Unit for Health Promotion Research, University of Southern Denmark
and University College South Denmark



Danish school system and health

- **Physical education scheduled**
- **45 min of physical activity per. day mandatory**
- **Health and sexual education**
 - Mandatory in curriculum (6-7 years old)
 - Ad-in in other subjects (7–15 years)



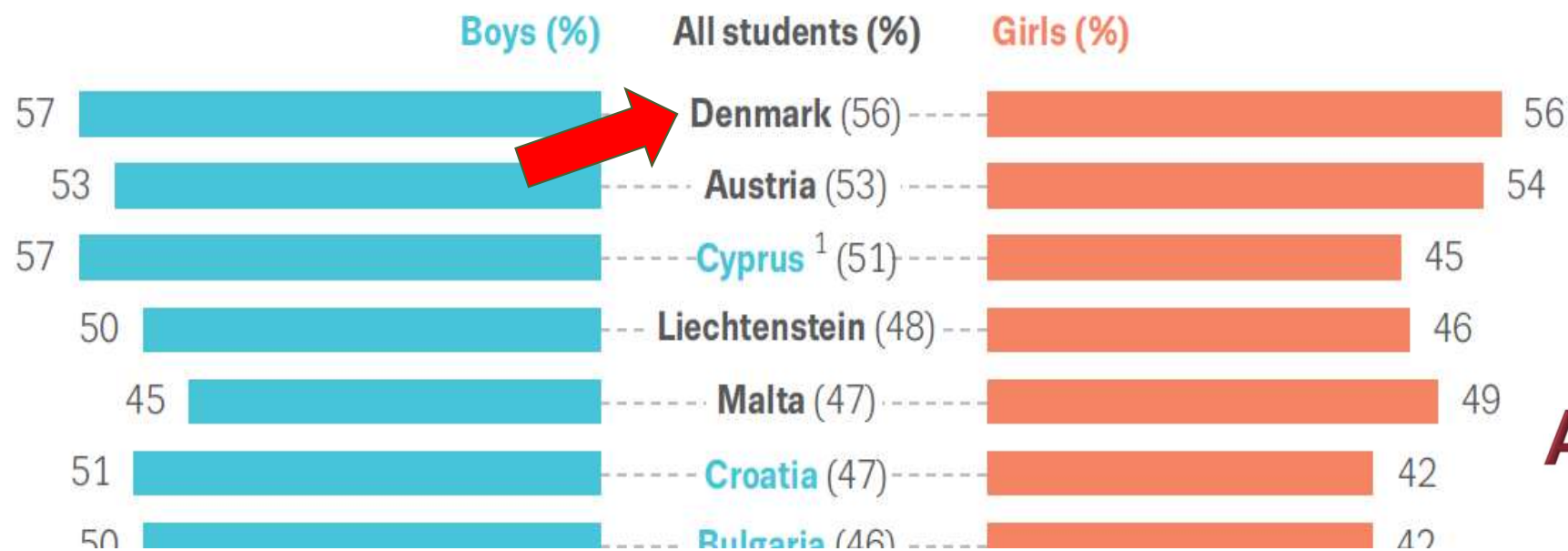
Agenda

- Background of the project
- Project aims
- Co-creation process
- Perception of the project from non-expert view (young people)
- Connection to health literacy

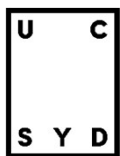


Binge drinking among Danish adolescents

Prevalence of five or more drinks at least once in the last 30 days by gender; one drink contains approximately 2 centilitres of ethanol (percentage)



**Average
35%**



ESPAD 2015

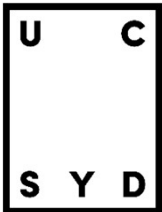
UNIT FOR HEALTH PROMOTION RESEARCH



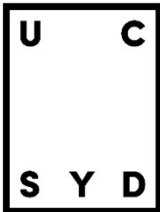
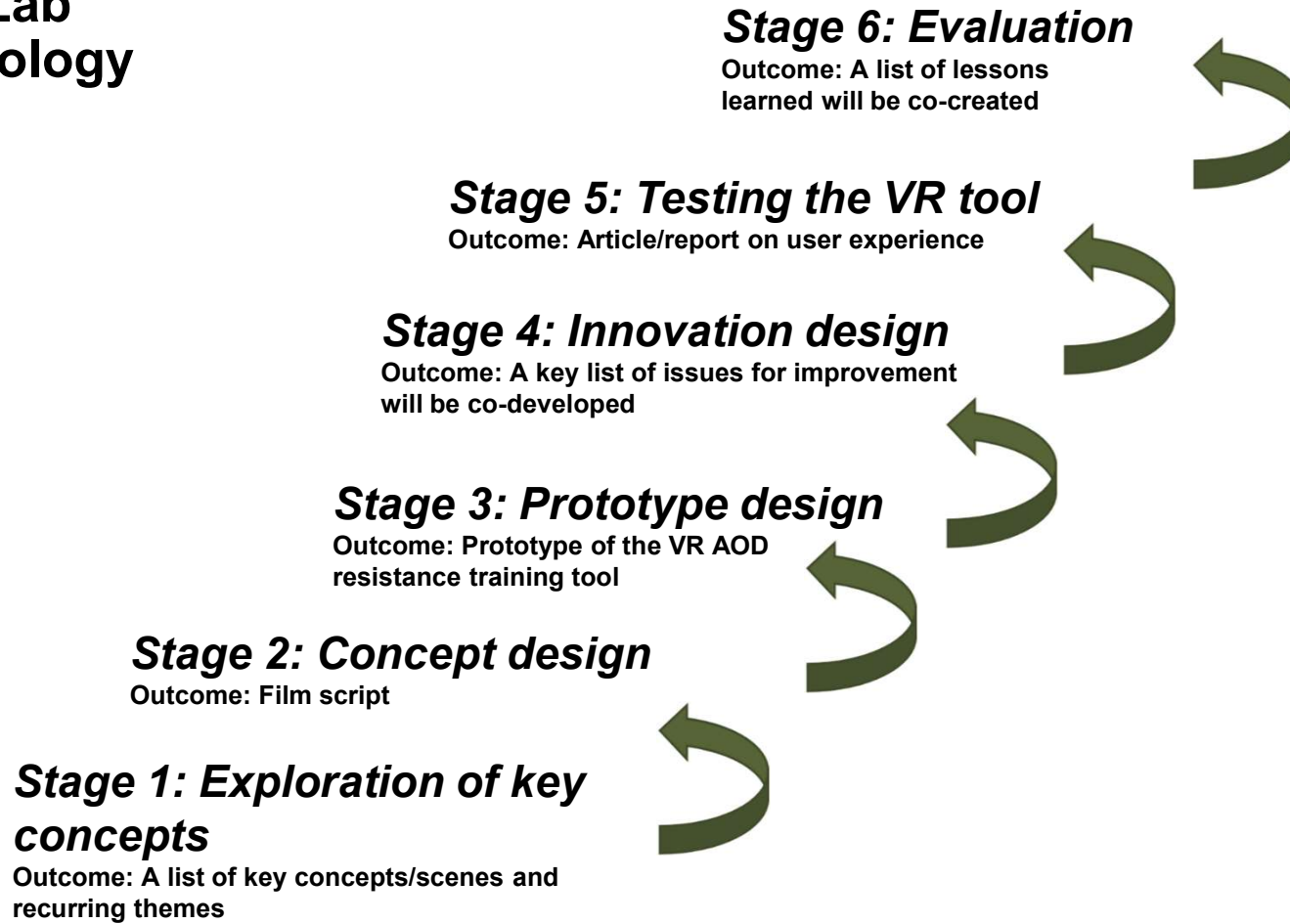
Aim

To develop a VR alcohol resistance training tool in co-production with adolescents and other stakeholders using an empowerment-based Living Lab approach

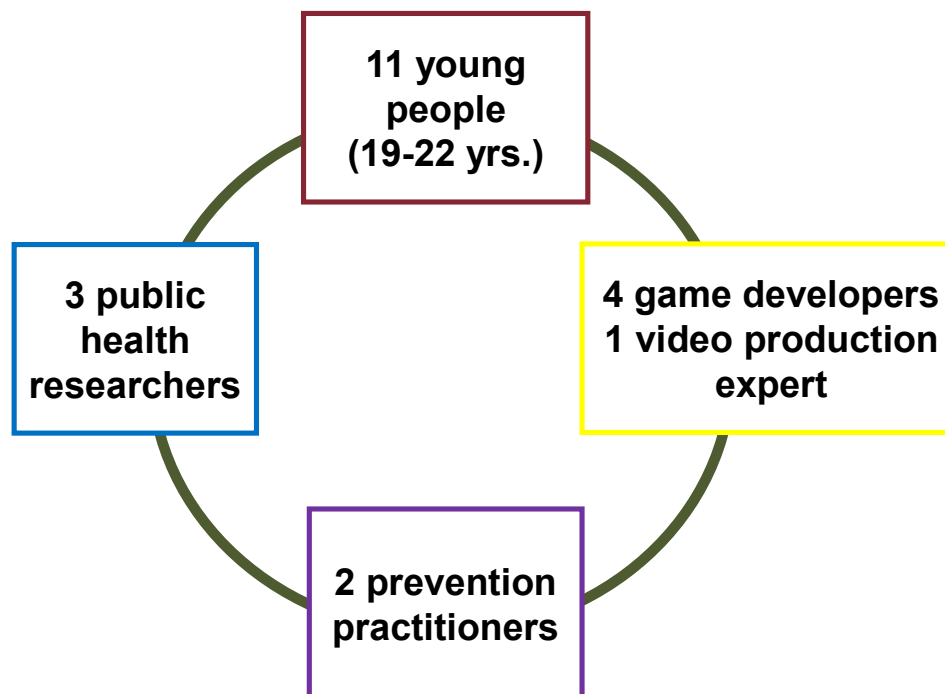
- Development based on Living Lab methodology in co-production with adolescents
- Partners:
 - Social Marketing@Griffith, Griffith University (Blurred Minds Project)
 - Mærsk Institute, University of Southern Denmark, Embodied Systems for Robotics and Learning
 - Drug prevention practice in Danish municipalities (SSP)
 - A folk high school for film and game production
 - A boarding school with theatre line



Living Lab Methodology



VR drug resistance tool – development group



U	C
S	Y D

Behaviour change methods of VR FestLab

Education

- User information on BAC when accepting drinks

Training

- Exploration of communication options with social feedback

Modelling

- Rolemodels for non-drinking
- Rolemodels for providing social support

Coercion/Incentivisation

- Experiencing negative consequences (physical and social) of accepting a high number of drinks
- Experiencing positive consequences (social) of choosing alternatives
- Experiencing social pressure

Intermediate factors (based on COM-B*)

Psychological capability

- Knowledge on BAC

Physical capability

- Communication skills

Social opportunity

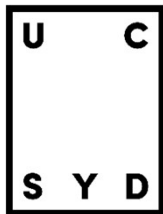
- Positive attitudes regards alternatives to drinking
- Social support for drunken peers

Reflective motivation

- Negative outcome expectations for high alcohol intake
- Positive outcome expectations for alternatives to drinking
- Awareness for social pressure

Behavioural outcome

Resist peer pressure to drink



*Mitchie S, van Straalen MM, West R. The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Impl Sci* 2011; 6:42

Exploration: Workshops with film/game students and practitioners

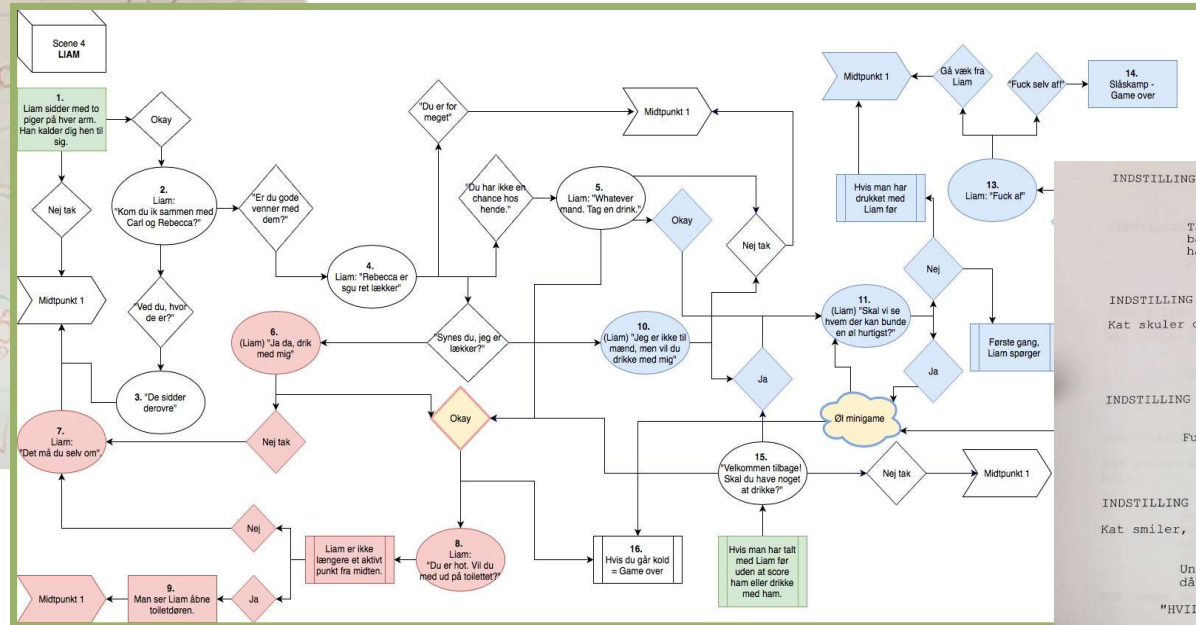
Stage 1: **Exploration of** **key concepts**

Outcome: A list of key concepts/scenes and recurring themes



Concept design: Film script

Stage 2:
Concept design
 Outcome: Film script



INDSTILLING 3
 KAT
 (smiler en smule)
 Tak, Kasper og Emilie prøver altså bare at slippe af med mig, fordi de har travlt med at snave.

INDSTILLING 4
 Kat skuler ondt til dig.
 "DET MÅ VÆRE NEJ" -> INDSTILLING 6
 "DU BURDE SMILE MERE" -> INDSTILLING 5

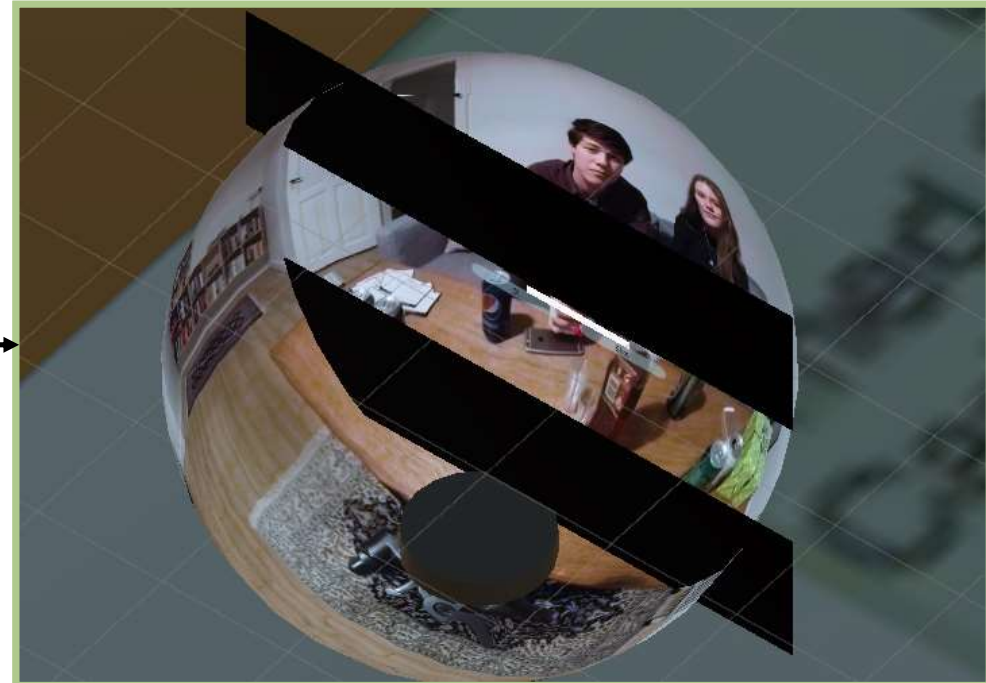
INDSTILLING 5
 KAT
 Fuck af med dig!
 TILBAGE TIL MIDTEN.

INDSTILLING 6
 Kat smiler, nu lidt mere interesseret.

INDSTILLING 7
 KAT
 Punk Rock.
 DET ER SKIDT -> INDSTILLING 9
 ØVRIGE VALG -> INDSTILLING 8

INDSTILLING 8
 KAT
 Der er bare aldrig nogen, der gider høre det til sådan nogle fester her.

Prototype development: Filming, editing and interactivity (Game Engine Unity)



Stage 3: Prototype design

Outcome: Prototype of the VR AOD resistance training tool



Prototype Testing and Improvement

Stage 4: Innovation design

Outcome: A key list of issues for improvement will be co-developed

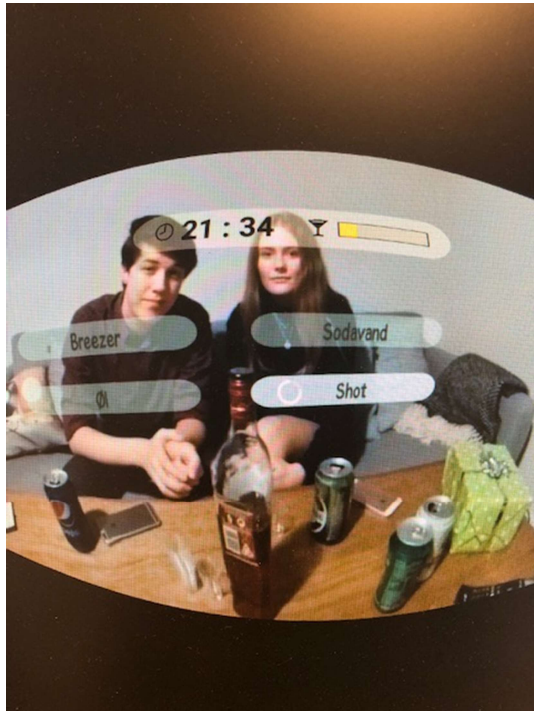


Pilot-Testing

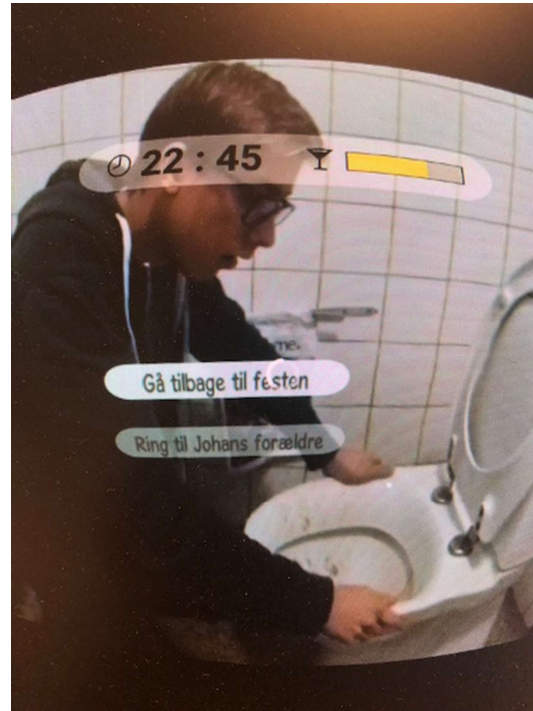
Stage 5: Testing the VR tool

Outcome:
Article/report
on user
experience

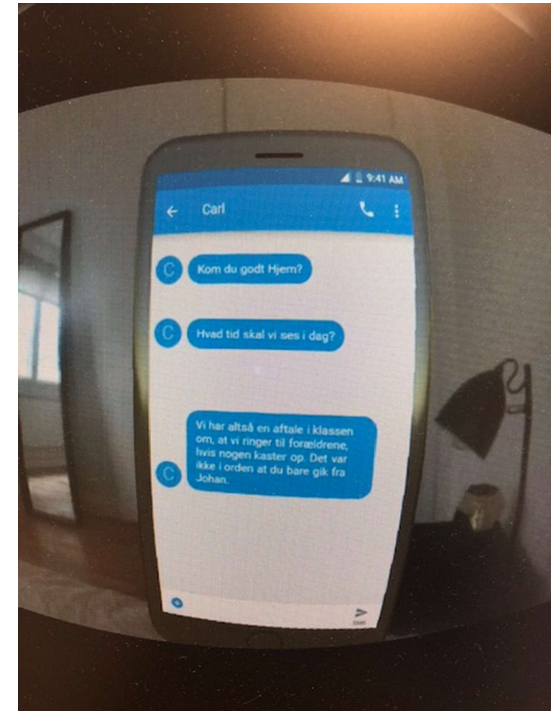
Pre-Party



Party experiences/choices

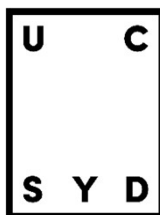




Next morning



Pilot-Testing

Guldager, J. D., Kjær, S. L., Lyk, P., Dietrich, T., Rundle-Thiele, S., Majgaard, G., & Stock, C. (2020). User experiences with a virtual alcohol prevention simulation for Danish adolescents. *International journal of environmental research and public health*, 17(19), 6945.




 International Journal of Environmental Research and Public Health 

Article
User Experiences with a Virtual Alcohol Prevention Simulation for Danish Adolescents

Julie Dalgaard Guldager ^{1,2,*}, Satayesh Lavasani Kjær ¹, Patricia Lyk ³, Timo Dietrich ⁴, Sharyn Rundle-Thiele ⁴, Gunver Majgaard ³ and Christiane Stock ^{1,5}

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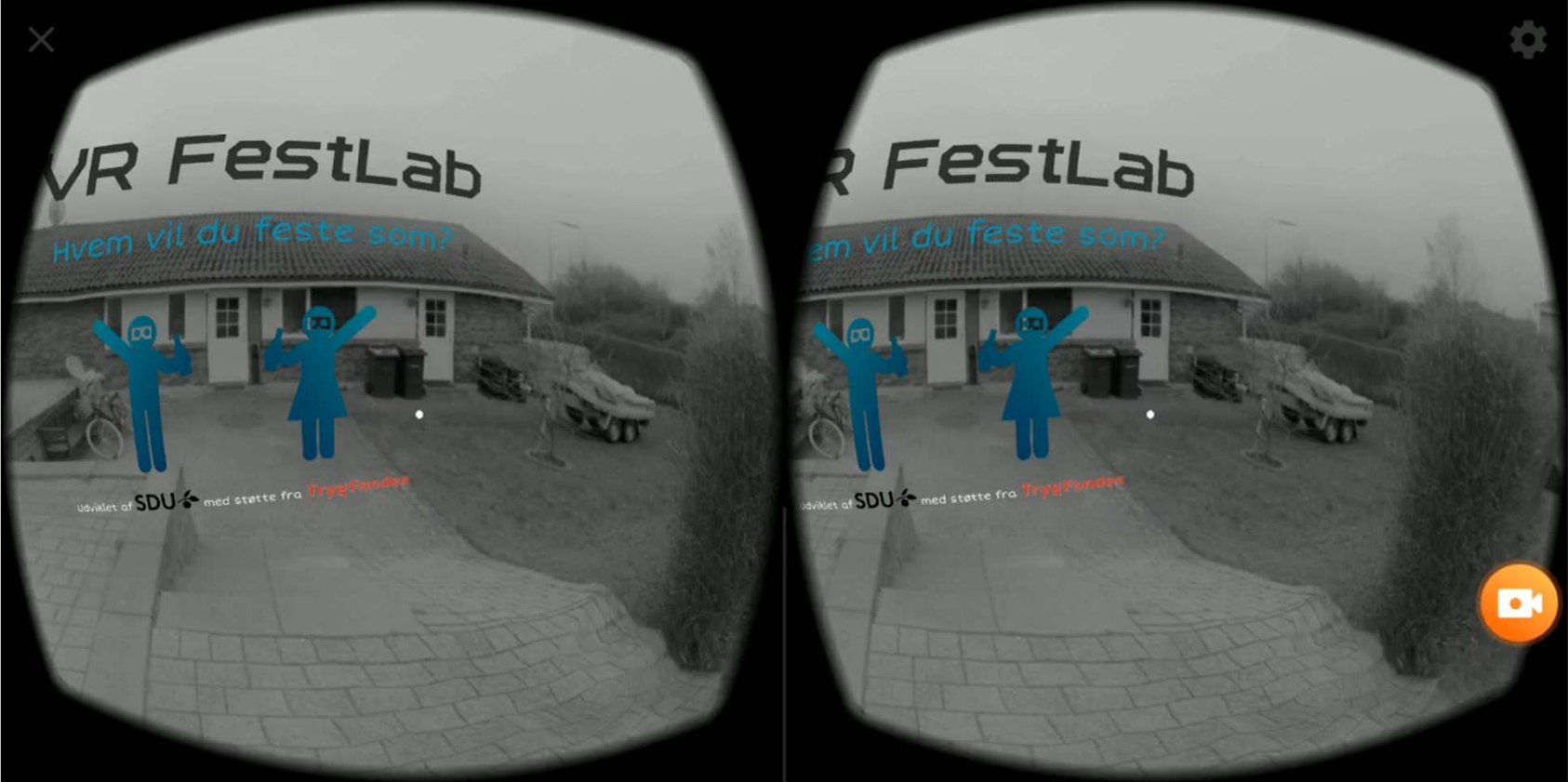
Abstract: This pilot study explores 31 Danish adolescent user experiences for the newly developed virtual party simulation app—Virtual Reality (VR) FestLab. The main objective of this study was to investigate usability for VR FestLab, which aims to improve alcohol resistance skills for Danish adolescents. A secondary objective was to understand gameplay experiences. The study is a mixed method study that draws on questionnaire data ($n = 31$) and focus group interviews ($n = 10$) of boarding school students participating in the pilot study. Descriptive statistics were used to examine quantitative data, and qualitative data were analyzed thematically. Quantitative findings indicated that gameplay experiences of the VR simulation were positive, and all User Experience Questionnaire (UEQ) items were answered positively. The focus group interviews showed that adolescents found the simulation to be realistic. Feedback indicated that the group pressure experienced in the simulation was regarded to be less than in real life. Adolescents had varying approaches to playing the VR simulation, they thought the quality of the simulation was good, and only a few users experienced technical difficulties. These initial study findings indicate that VR FestLab is a promising tool for the prevention of alcohol use among adolescents.

Keywords: students; pupils; user experiences; virtual reality; alcohol prevention; drug resistance skills; school

1. Introduction

Adolescent alcohol consumption is a major public health concern because of its short- and long-term psychological, social, and physical health consequences [1,2]. Heavy alcohol drinking during adolescence has been associated with cognitive deficits in learning, attention, and communication skills, disruptions in memory, increased susceptibility for anxiety, and increased risks of substance use disorders later in life [3]. Further, alcohol substance use has been found to be associated with delinquency, unwanted pregnancy, and school failure [4]. Temporal trends indicate a decrease in alcohol use among European adolescents from 1995 to 2018 [5–7]. However, it is worrying that

Int. J. Environ. Res. Public Health 2020, 17, 6945; doi:10.3390/ijerph17196945 www.mdpi.com/journal/ijerph



VR FestLab

Hvem vil du feste som?

udviklet af SDU med støtte fra TrykFonden

VR FestLab

Hvem vil du feste som?

udviklet af SDU med støtte fra TrykFonden



Living Lab Methodology

Stage 6: Evaluation

Outcome: A list of lessons learned will be co-created

Stage 5: Testing the VR tool

Outcome: Article/report on user experience

Stage 4: Innovation design

Outcome: A key list of issues for improvement will be co-developed

Stage 3: Prototype design

Outcome: Prototype of the VR AOD resistance training tool

Stage 2: Concept design

Outcome: Film script

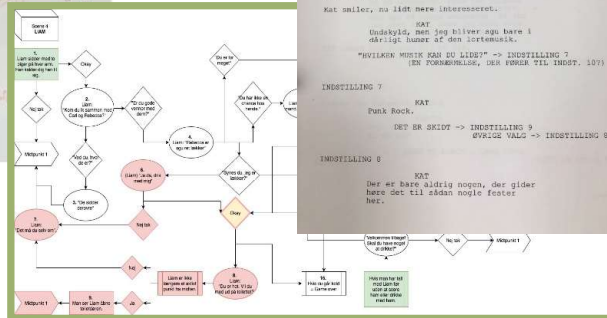
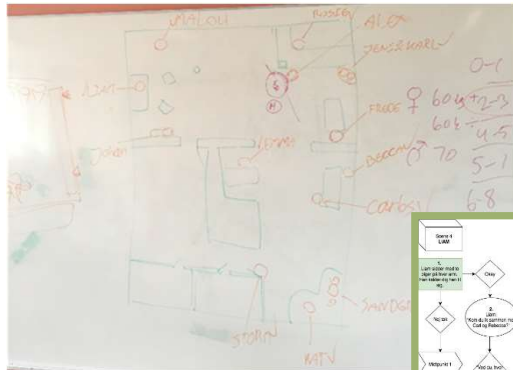
Stage 1: Exploration of key concepts

Outcome: A list of key concepts/scenes and recurring themes

U	C
S	Y D



How did the young people involved experience the co-creation process?



INDSTILLING 3
KAT
(Smiler og nikker)
Tak. Kasper og Emilie prøver altid
bare at slippe af med mig, fordi de
har travlt med at arbejde.

INDSTILLING 4
KAT
Var skulet godt til dig.
"DET VÅR VARE NÅR" -> INDSTILLING 6
"DU MÅR SMILE MERE" -> INDSTILLING 5

INDSTILLING 5
KAT
Fuck af mig!
TILBAGE TIL MICTEN.

INDSTILLING 6
KAT
Smiler, nu lidt mere interesseret.
KAT
Undskyld, men jeg bliver også bare i
dårligt humør af den lortemusik.
"HVIKAIN MØRER KAN DU LIGE?" -> INDSTILLING 7
(EN NORMALET, DER SPØR TIL INDST. 10?)

INDSTILLING 7
KAT
Punk Rock.
DET ER SKIDT -> INDSTILLING 9
SVIRVE VALG -> INDSTILLING 8

INDSTILLING 8
KAT
Der er bare aldrig nogen, der gider
bare det til sådan nogle fester
her.

QUALITATIVE STUDY

- 9 focused semi-structured interviews with students from the development group (four female and five male)
- Tape-recorded, transcribed
- Analyzed with content analysis

Results

How have your ideas been used?

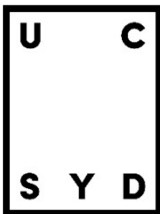
Even the silly ideas I came up with, they were also well received...[...]...As long as you kept within the boundaries of what was realistic, there were no wrong answers or wrong ideas. You could only come up with good ideas. I actually think that was really nice.

How did you experience the collaboration with researchers and experts?

I thought it was really fun to create these characters and it has given me a new kind of self-confidence or what it is called.

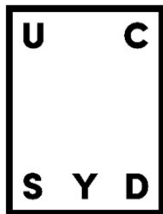
I had expected that there would be more modifications than there were. That we had to change many things and perhaps had even misunderstood something. But it was very well received, and they really backed up our ideas. So, I think that was amazing.

So I think that was cool, that us ordinary students who are eighteen or nineteen years old, can come up with something, which a grown-up man can approve and think is really good. That makes you feel kind of, put up on a pedestal, kind of like "Oh I know that I'm good".



Conclusion

- The Living Lab approach was useful to structure and guide the co-creation process
- Students involved benefitted from the collaboration resulting in self-empowerment, increased self-efficacy and new skills
- Creativity flourished and benefitted the end-product VR FestLab



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Next step

- Randomized controlled trial
- Students aged 15-18
- Primary outcome:
 - Drinking refusal self-efficacy (DRSEQ)



Next step



Discussion

- Can the co-creation process "create" health literacy for the young people developing the app? Why? Why not?
- Can the co-creation process "create" health literacy for the adolescents using the app? Why? Why not?
- Can Virtual Reality be used for increasing health literacy? Why? Why not?
- Your comments in general

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THANK YOU

