

Background VR bus ride – for ADHD & ASD



VR bus ride - ADHD & ASD challenges and societal situation

1

Autism (ASD)

- Persistent challenges in
 - Social interactions
 - Speech and nonverbal communication
 - Restricted / repetitive behaviors.



1 in 59



Can be diagnosed at 2-3 years



3-4 times more common in Boys than girls

2

Attention deficit hyperactivity disorder (ADHD)

- Above normal levels of hyperactive and impulsive behavior.



8.4% children & 2.5% adults affected



2 times more common in Boys than girls



5% of School going children are found affected by ADHD

3

Denmark

- Current Initiatives through the municipalities is providing trainings on Daily Life Skills (DLS) for children and adolescents with learning disabilities.
- Bus and Taxi service for school children suffering from ASD and ADHD.
- Current Annual spend - ~\$190 M.

VR bus ride – Interactive bus ride simulations – example of some features (1)

Feature - Meet & greet

First step meeting Ed the bunny at the bus stop and getting on the right bus.

This is a huge step for ADHD/ASD individuals.



Feature - Entrance

Entrance Ed stands in front of the pupil and is a reinforcing mascot for the child/ adolescent who praises them when they enter the bus.



Feature - Payment

Payment Ed demonstrates a number of points collected once the pupil completes payment correctly.



VR bus ride – Interactive bus ride simulations – example of some features (2)

Feature - Milestones

Milestones Ed's thought bubbles with key milestones depicted to guide the child/ adolescent with what to look out for.



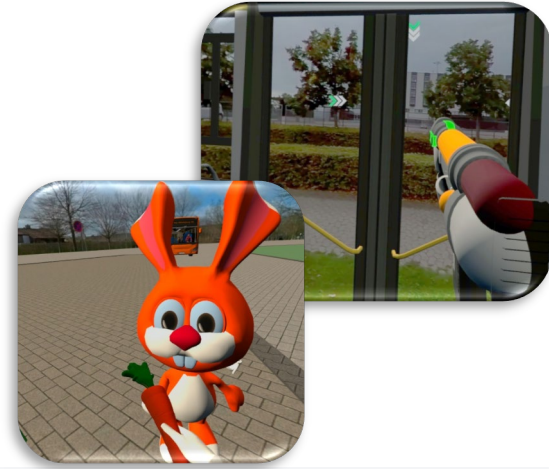
Feature - Points

Points completing the journey correctly, spotting the right milestones, paying for the bus, getting off at the correct stop – all give points



Feature - Gamification

Gamification with weapons and reward or treat selection depending on the points gathered on each level.



NEW Bus Routes: we are able to quickly onboard a new bus route into the app in a matter of weeks and it can be made available from our cloud backend so there is no app reinstall or update.


VR bus ride – Winner 2022

 Microsoft

Microsoft #BuildFor2030 Hackathon Winner

Digital Inclusion and Accessibility

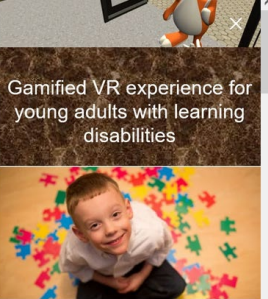
 **BOSCH**
Invented for Life



VR Bus Ride
RBEI XR team

RBEI XR Team

Application Comments [0]



Gamified VR experience for young adults with learning disabilities

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Submitted on Nov 22, 2021

<https://challenges.wechangers.org/challenge/microsoftbuildfor2030hackathon/applications?application=25176340>

2022 Winner of Microsoft Hackathon 2030

Testimonials from the VR bus ride



"With a group of young people with learning difficulties, it can be an insurmountable challenge to take the bus. Rødovre Municipality has completed a course with five young people who could not take the bus themselves. Before the course, they were convinced that they could not do it themselves, it ended up that the participants were so confident that they could all take the bus in the real world without any problems. In other words, there was a learning from VR to real life, which is groundbreaking. The experience has given students the opportunity to dream about what they can do if they are not dependent on others."

Britt Jensen

Mayor of Rødovre



"We started by building a Minimum Viable Product (a kind of prototype, ed.) And thought we were taking the first step in a longer process. But the kids were incredibly motivated. They took huge strides forward and quickly gained greater independence and better quality of life, it was moving to see the children themselves take the bus for the first time and to hear them say that they too could visit their grandmother or take in Tivoli."

Sune Buch-Sloth

Chief Technical Consultant, Rødovre Municipality

VR bus ride – Key take away points

- | | | |
|--|--|---|
| <ul style="list-style-type: none">• Today - significant monetary expenditure on social inclusion.• Today - significant time spent by teachers on a 1-1 basis.• Today - long duration before results from skill building and behaviour therapies. | <ul style="list-style-type: none">• Now pupils can learn in the comfort of a VR lab instead of on actual road trips.• 2 – 3 routes mapped with landmarks.• Sessions of 20 – 25 mins each. Pr. Student. | <ul style="list-style-type: none">• Improved cognitive performance; such as working memory, executive function, and attention span.• Faster and more effective transference of learning in VR to real life = it works.• Enhanced self confidence of pupils. |
|--|--|---|

Current methods - Learning disabilities

With VR bus ride / EdTech

Results

Next Steps

- ▶ Grow market – VR bus ride within all specialist schools in DK, SE, NO, FI and the rest of EU.
- ▶ Build solid partnerships with municipalities to enhance skillset of children and adolescents with learning disabilities, strengthening their life prospects, enhancing their independence and reducing the future costs to society.
- ▶ *Later – move forward with VR City Program together with MFST.*



**THANK
YOU**