Reimagining speech therapy education:

a dual-focused VR approach for enhanced training

Presented by:

Robbe Vanden Brande

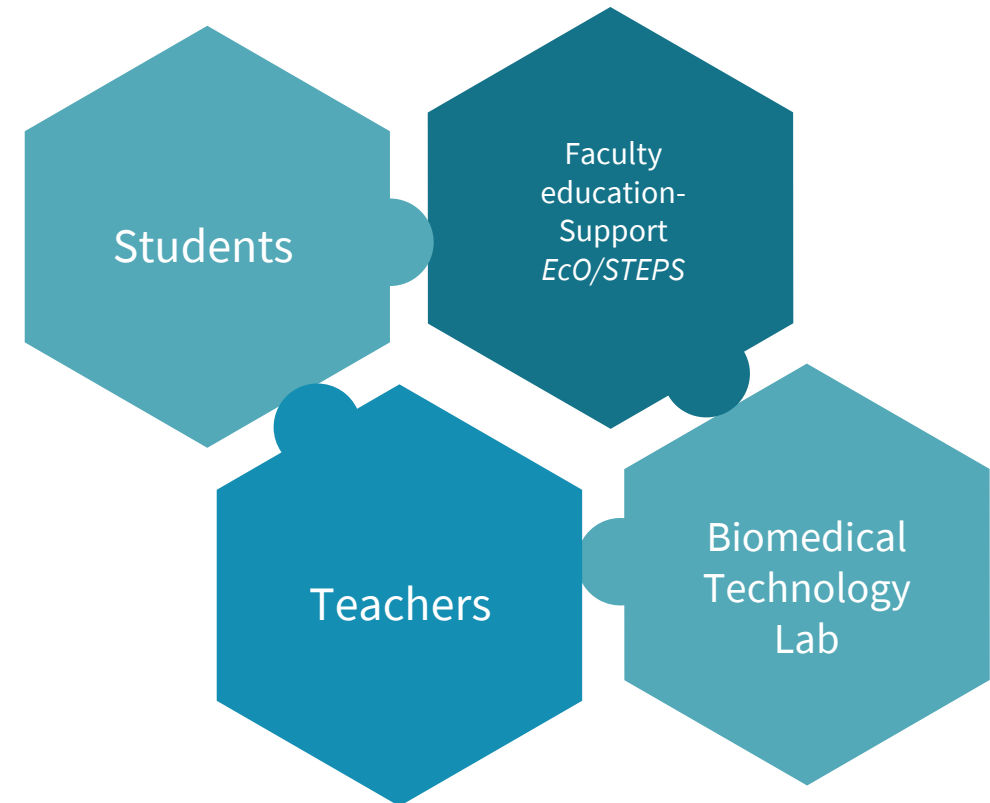Authors: Ellen Rombouts/Robbe Vanden Brande

Faculty of Medicine KU Leuven

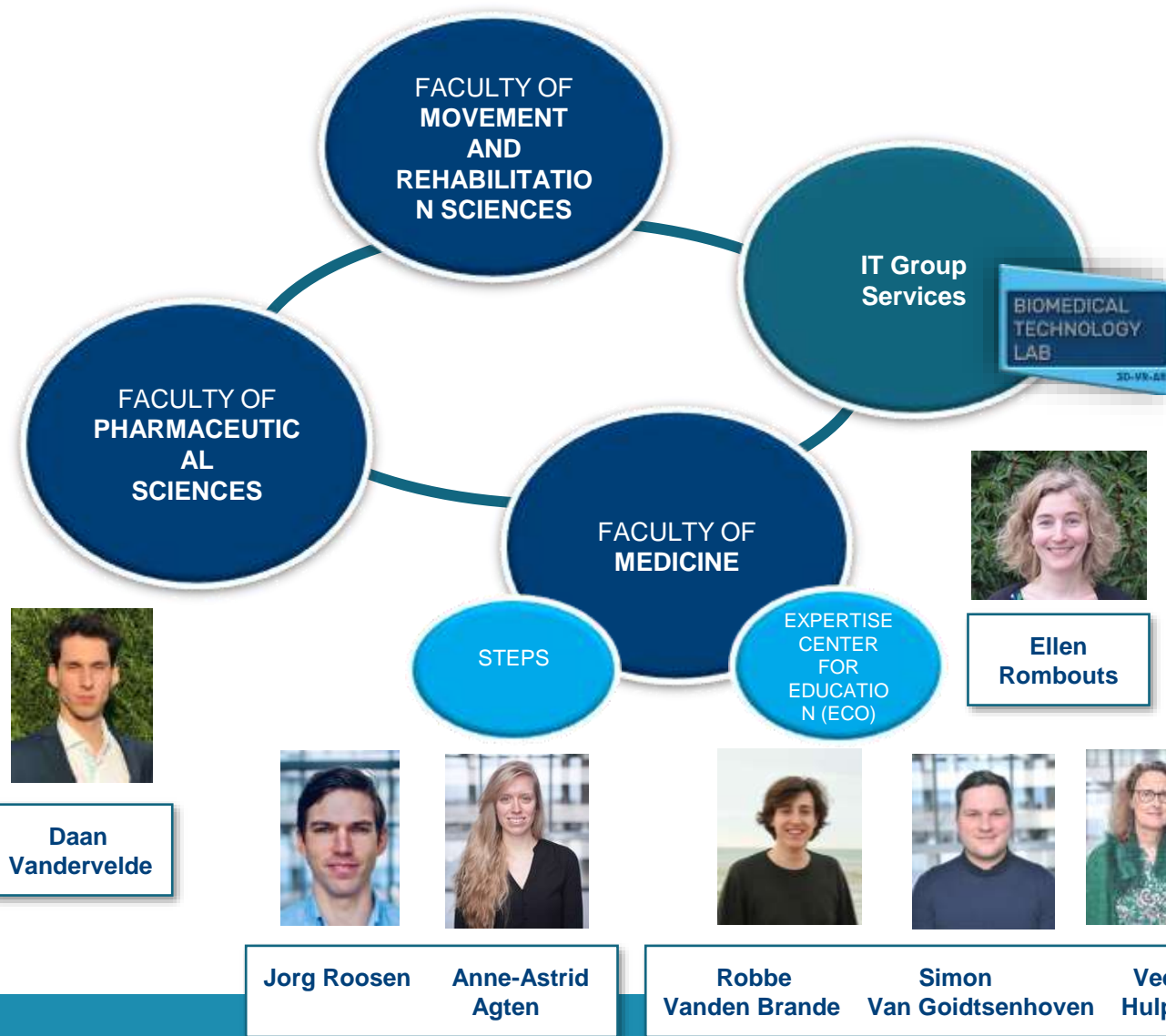# KU Leuven XR-creations = multidisciplinary

- Educational vision of the Faculty of Medicine – lifelike learning
- Major use in simulation training
  - Safe environment
  - Repetition
  - Feedback

  → XR perfect for this

  ▪ Multidisciplinary by definition
  ▪ In varying combinations

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VR-team inside Group BMW

FACULTY OF **MOVEMENT AND REHABILITATION SCIENCES**

FACULTY OF **PHARMACEUTICAL SCIENCES**

IT Group Services

BIOMEDICAL TECHNOLOGY LAB

FACULTY OF **MEDICINE**

STEPS

EXPERTISE CENTER FOR EDUCATION (ECO)

Ellen Rombouts

Daan Vandervelde

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Robbe Vanden Brande   **Simon Van Goidtsenhoven**   **Veerle Hulpiau**

OUR XR DEV TEAM

Sven Graindor
IT Project Lead
Game, UI & Level Design

Karel Lommaert
Game Developer

Bram Ghuys
Game Developer

WEB DEV TEAM (IAS)

Steven Jespers
PHP Developer

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Stuttering

Who feels (kind of) uncomfortable when talking to someone who stutters?

I believe that I act the same around people with stuttering problems as around people without.

Who doesn't mind stuttering themselves?

Imagine you are going on a first date, would you dare to stutter?

Assignment

Speech therapy and audiological sciences – academic bachelor and master

Phase 3 of training – care pathway fluency

Exercise objective

(1) 'Dare to stutter'
- Fluent and voluntary stuttering is taught to clients (students)
- Without any discomfort > stigma (!) & acceptance
- Still implicit discomfort > non-verbal cues
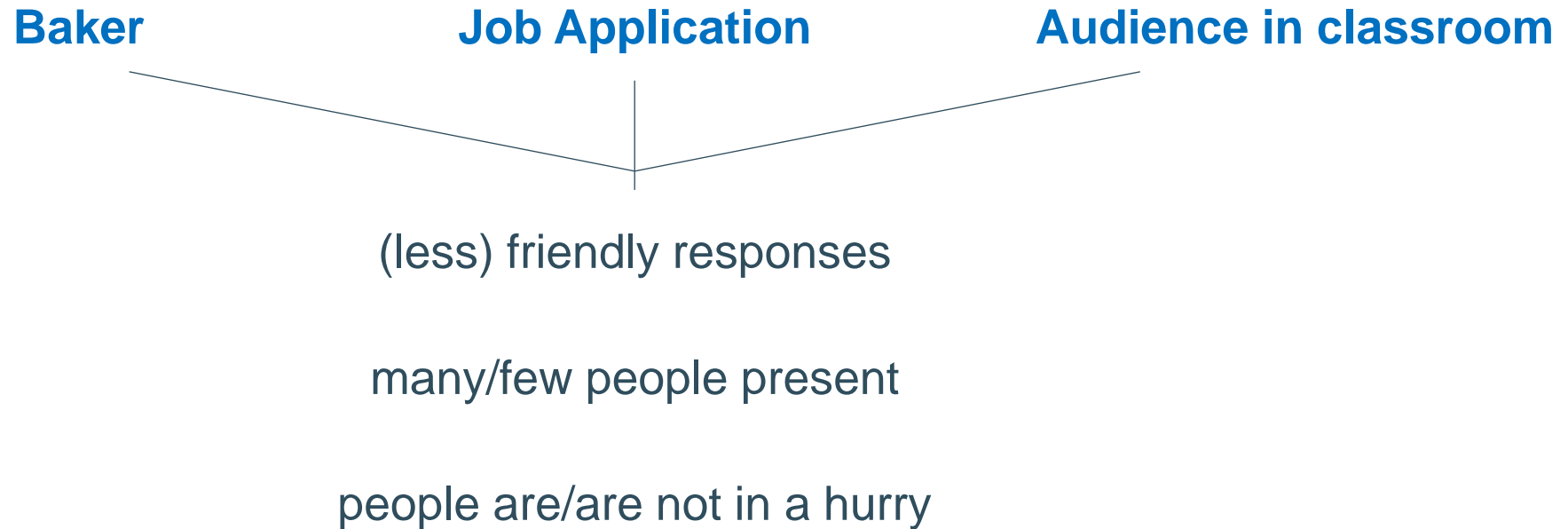
Need

Daring to stutter on the street(BA3)
- High threshold for some > shame
- No exchange or reflection with others
- No link with theory around fear, stigma or therapeutic principles

Assignment

Reason to make the assignment in 360 videos

Voluntary stuttering in different social settings

Baker   **Job Application**   **Audience in classroom**

(less) friendly responses

many/few people present

people are/are not in a hurry

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Why VR?

Rise of VR in speech therapy

Lifelike BUT safe, controlled environment

Gradual and structured difficulty progression

Differentiation in level, practice independently

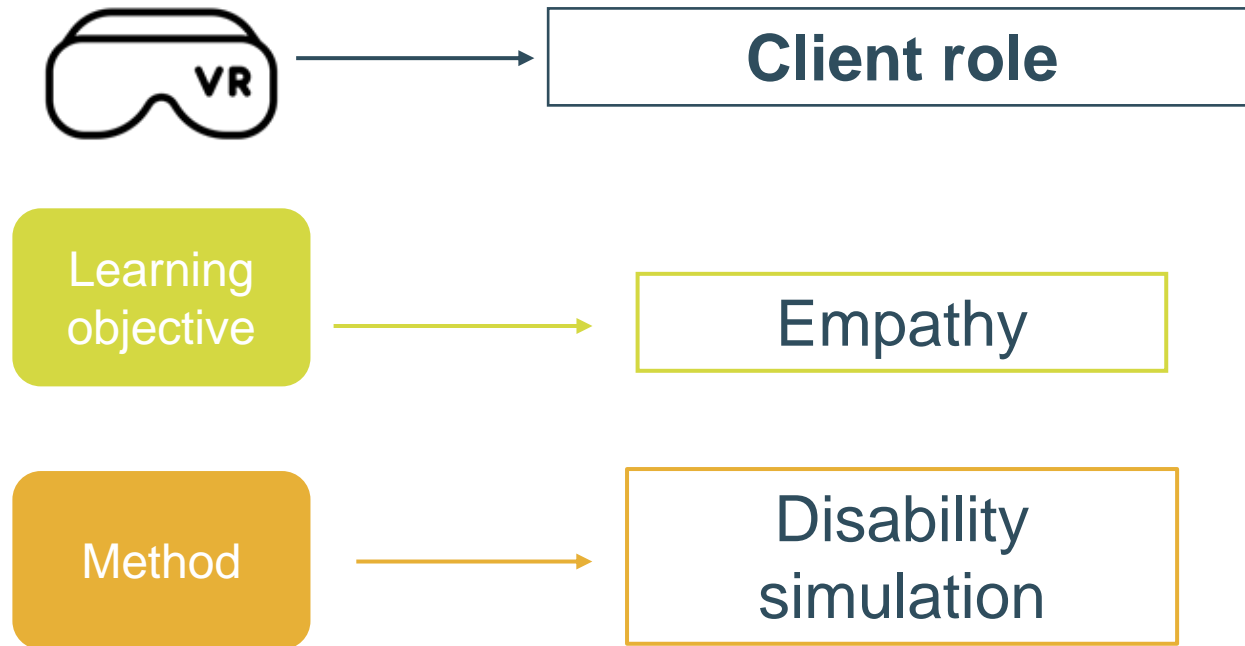'Freeze' in the moment > perpetuate self-insight

What kind of VR?

360° video instead of computer-generated

'easy to use', for the time being, it is still preferred by speech therapists themselves
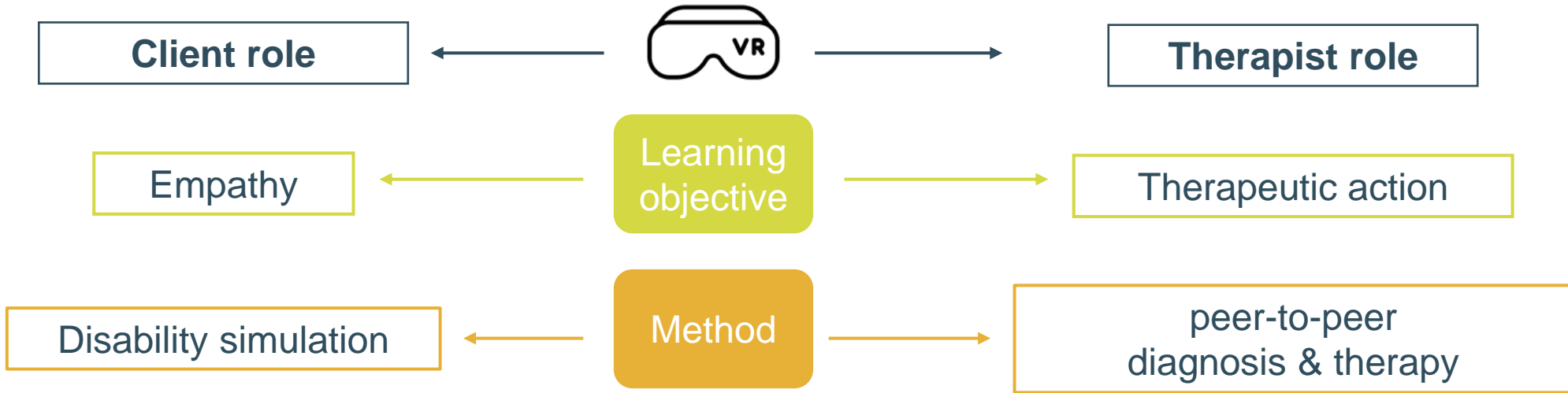
natural expression > crucial for social anxiety

Presence   vs   engagement

Originele doel

Client role

Learning objective → Empathy

Method → Disability simulation

STOTTEREN > SPREEKANGST

Client role

Therapist role

Learning objective

Empathy

Therapeutic action

Method

Disability simulation

peer-to-peer
diagnosis & therapy

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Practical information

Students work together in groups of 3 to 4

Around 12 groups of students

Each group uses 1 Quest 2 or quest 3

Until now: Unity project – next year external program

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Did this exercise teach you anything about stuttering and the experience of people who stutter? Why/why not? And if so, what?

"The exercise mainly made me realize that avoidance behavior and the fact that people who stutter often experience stress is a very logical reaction. It was already very stressful for me to have to pseudo-stutter in VR, let alone when you have to do this in a real situation."

"I also noticed that I was happy when I got rid of my stuttering so that I didn't have to do it again. Then you realize that this is not the case for people who stutter and that they will continue to stutter. I found that a confrontational thought."

"Although I don't view people who stutter differently at all, I am still very surprised by the threshold I experienced and the stress I experienced. […] shows that I unconsciously view stuttering more as something negative or undesirable."

"I am more aware of how people's reactions can have an impact on people who stutter. I have also noticed how important non-verbal behavior is when someone is speaking. I will therefore try to pay more attention to actively listening and taking an active listening attitude."

"That is why it is extra important that we give people who stutter enough time and space and show them enough respect, because they will also feel more at ease and experience this stress less."

Research@KUL

Current master's theses specifically around this Stotter-VR tool

(1) Already 150 students surveyed, as part of their training

(2) Effectiveness, experimental research

which concrete learning outcomes: empathy?

VR versus hearing 'testimony' (based on 'contact hypothesis')

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Future research

Majoring in Speech Therapy:

- Raising your voice in a healthy way (e.g. virtual classroom)
- Conversations with clients with communication problems
  - Virtual simulation of client real-time manipulations (non-)verbal responses (hyperrealistic, engagement)

- Fear of public speaking: practicing presentations, eye contact with the audience (eye-tracking)

- Development/Research VR in therapy: voice complaints for teachers, language therapy in children

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Questions?

Thank you for your attention

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