

#PHC23

# BREAKOUT SESSION: HEALTHY START

— *Exploring innovative approaches to health and education equity*

**TU/e** EINDHOVEN  
UNIVERSITY OF  
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# THE 'CONFIDENCE GAP' AND INEQUALITY IN EDUCATION: A FOCUS ON TEACHER-FEEDBACK

#PHC23



**Stefanie Nelemans**

UU



Utrecht  
University

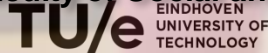
# CHILDREN'S SELF-VIEWS AND INEQUALITY IN EDUCATION

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Faculty of Social and Behavioral Sciences



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# RESEARCH



Adolescent mental health



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Development of self

UMC Utrecht

# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION





UNIVERSITY  
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# KiD LAB



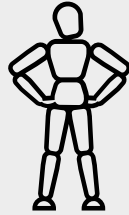
Dr. Eddie Brummelman

(e.brummelman@uva.nl)

<https://kidlab.nl/>

# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION

*Worldwide (!) problem*



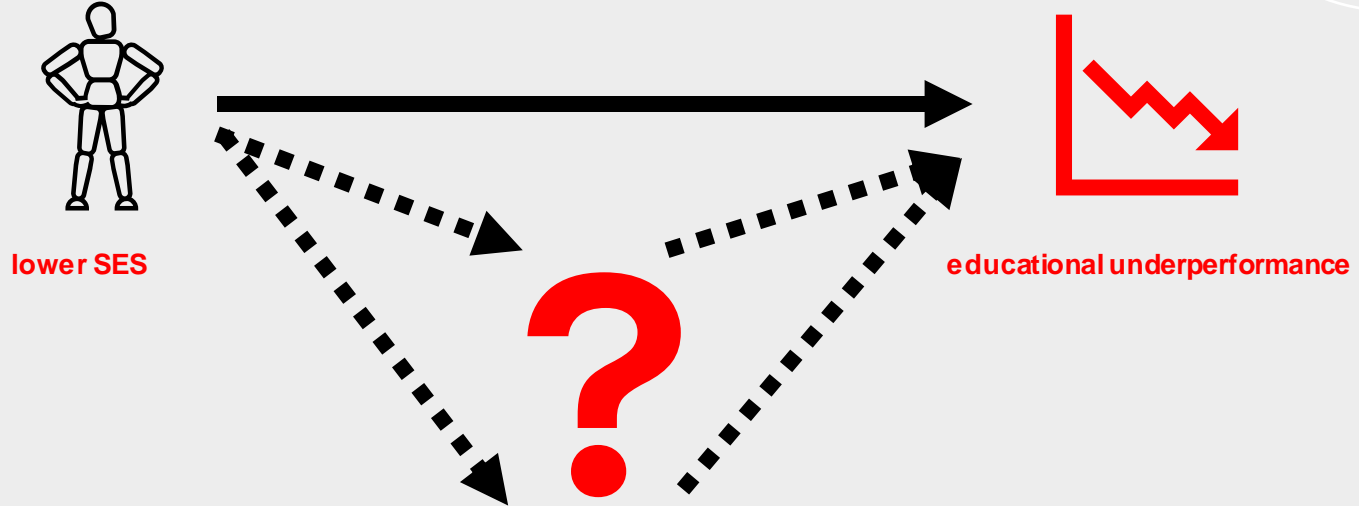
lower SES



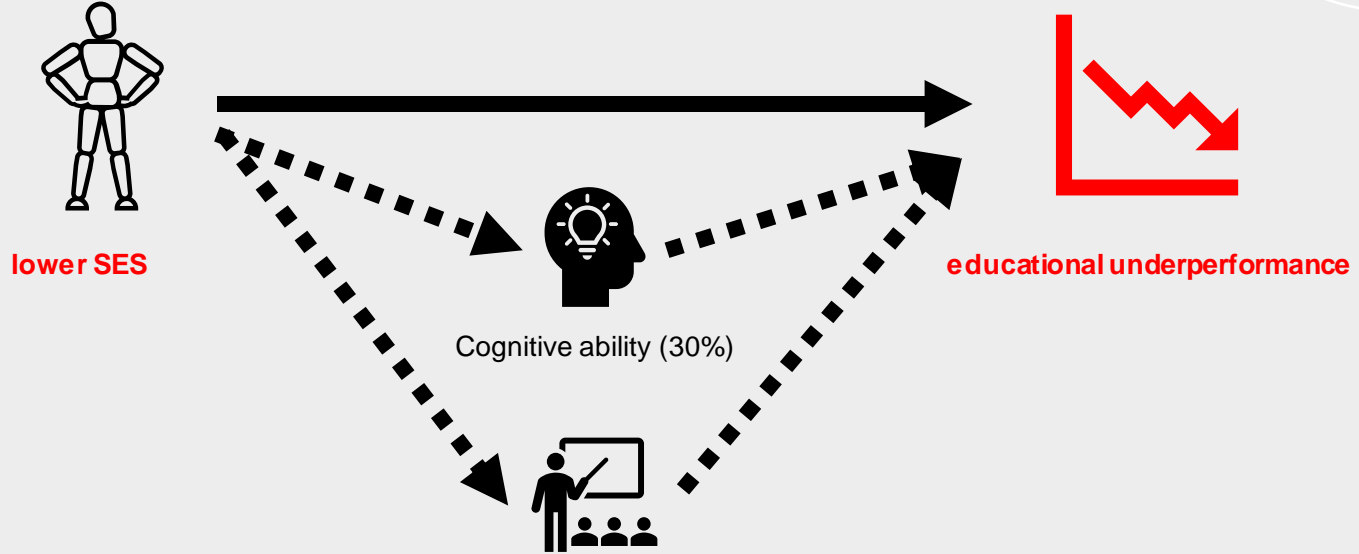
educational underperformance



# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION

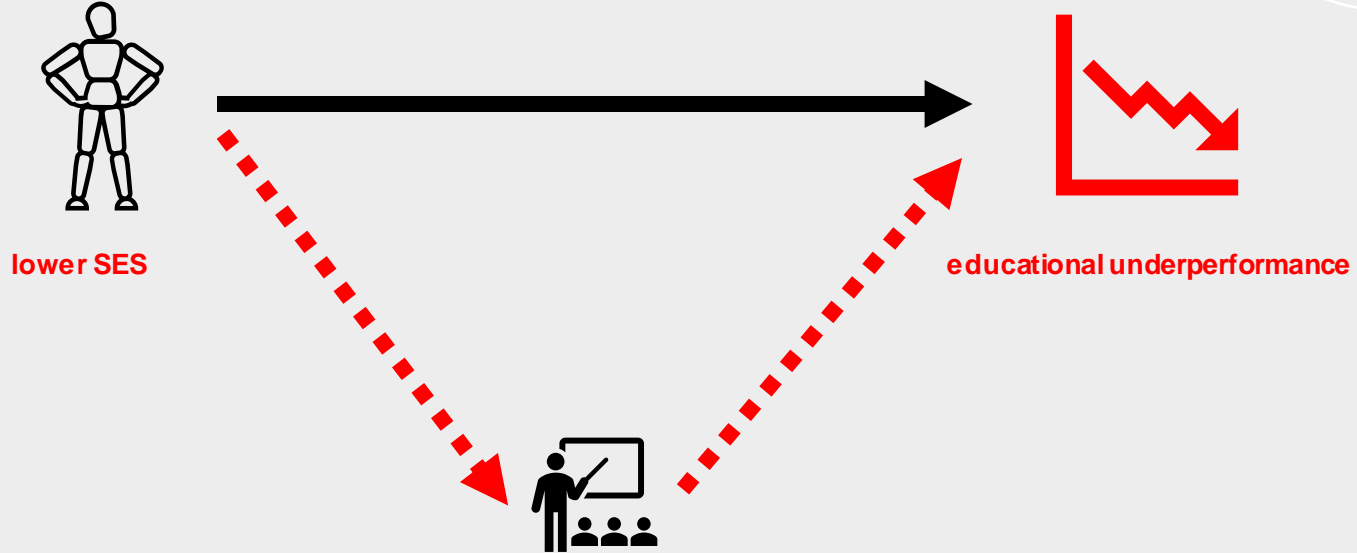


# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION

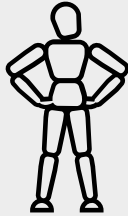


# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION

What happens in the classroom?



# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION



## lower SES = lower self-view

Believe they lack skills/abilities

Feel less smart than others

Think that they cannot improve skills/abilities

...



## negative beliefs about lower SES

Perceive as less academically gifted

Perceive as less suited for high(er) academic tracks

Evaluate work more harshly

...

# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION

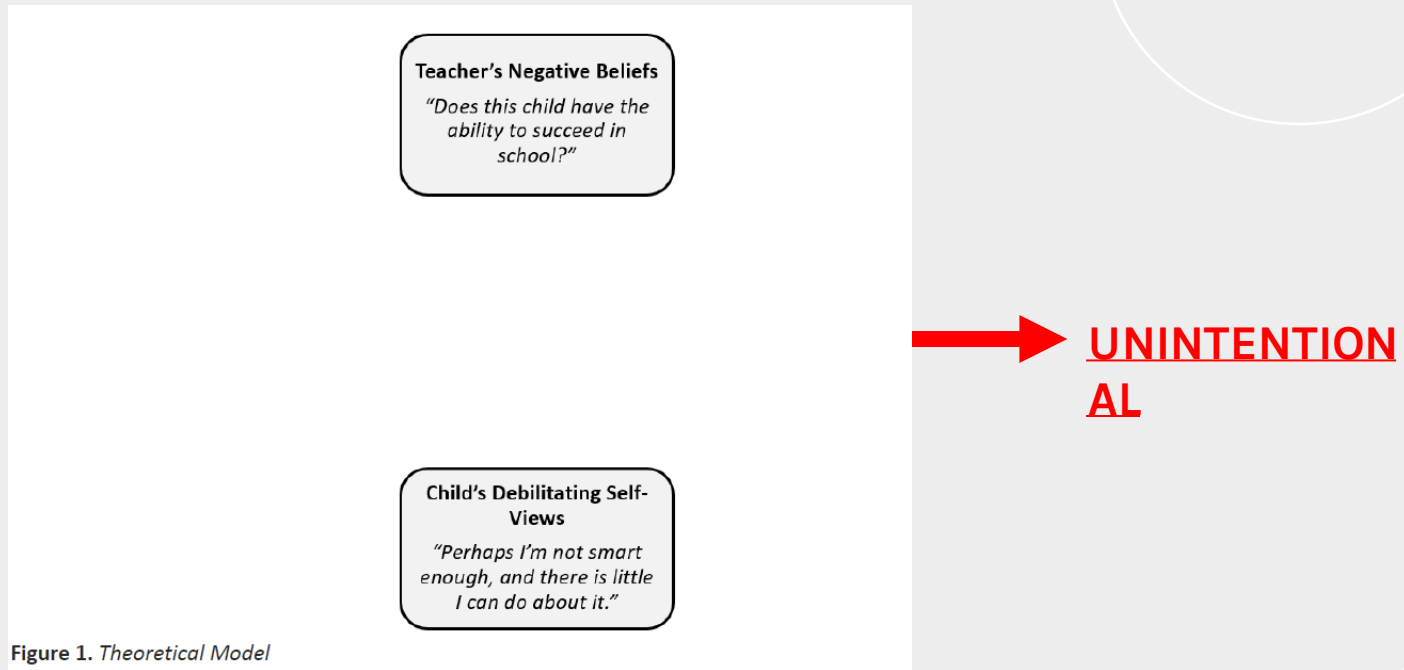


Figure 1. Theoretical Model

# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION

Als sociale ongelijkheid in het hoofd van de leerling kruipt. 'Niet iedereen kan een Einstein zijn'

*[When social inequality creeps into the pupil's mind. 'Not everyone can be an Einstein']*

# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION

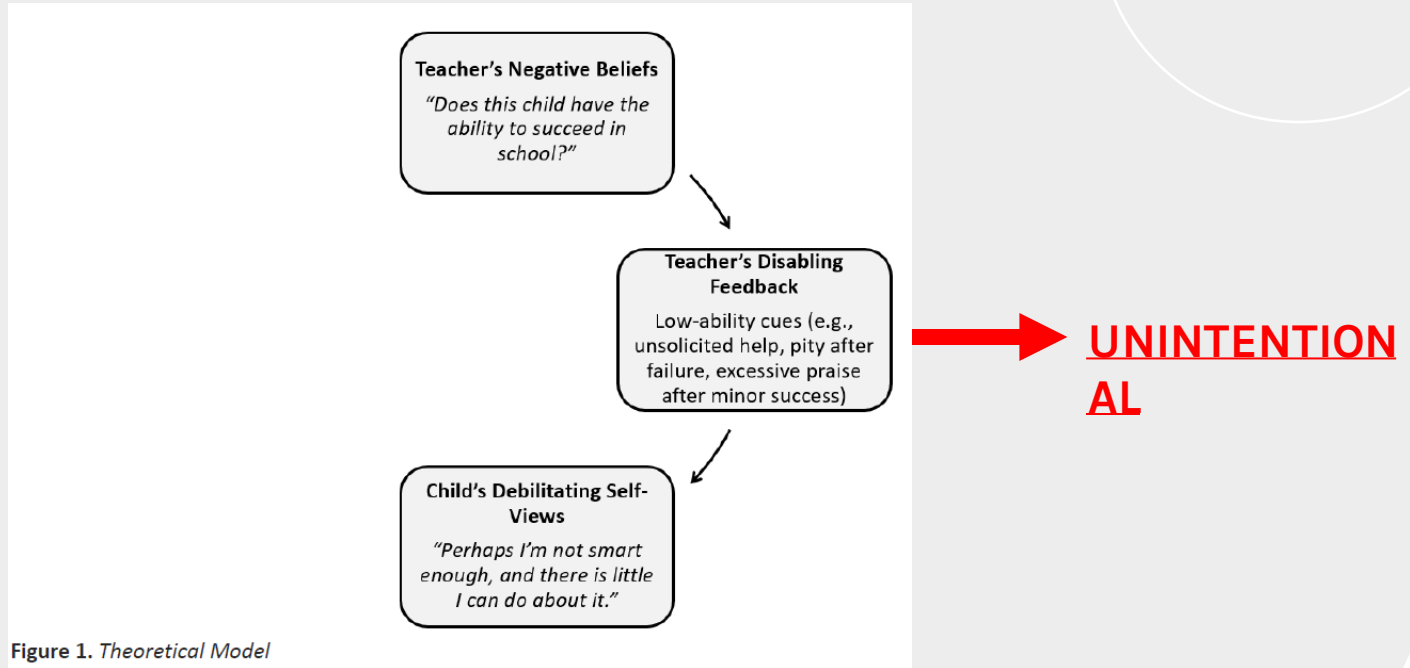


Figure 1. Theoretical Model

# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION

What happens in the classroom? → project design



Observation: Do teachers show different feedback/behavior to children from different SES?



# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION

What happens in the classroom? → project design



Observation: Do teachers show different feedback/behavior to children from different SES?



VR experiment: How does teachers' disabling feedback/behavior affect children's self-views (from different SES)?

# CHILDREN'S SELF-VIEWS & INEQUALITY IN EDUCATION

What happens in the classroom? → project design



Observation: Do teachers show different feedback/behavior to children from different SES?

Longitudinal data collection



VR experiment: How does teachers' disabling feedback/behavior affect children's self-views (from different SES)?



Utrecht  
University

# THANK YOU!

Want to know more? Interested in collaborating? Questions?

Contact us!

[s.a.nelemans@uu.nl](mailto:s.a.nelemans@uu.nl)

<https://kidlab.nl/>

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# HOW TO INVOLVE LOW LITERATURE TEENAGERS IN HEALTHY LIVING RESEARCH?

#PHC23



Kirsten Verkooijen  
WUR

# How to involve low literature teenagers in healthy living research?

Kirsten Verkooijen, WUR

7 December 2023, I4PH conference Utrecht



# A cause for concern...



- Young people with a mild intellectual disability (IQ: 50-80) experience greater challenges than their peers in healthy living
- Existing health promotion efforts are not tailored to this group
- Health technology has great potential, but only if relevant stakeholders are involved in development and implementation

# LIFTS project

- Healthy LIFestyle for low liTerate teenagers
- 5 years (start Oct. '23) funded by NWO
- Many partners
- 4 PhDs



# Research question and approach



Research question:

- How to promote, in a **participatory** way, sustainable healthy living in PrO students with the use of accessible, acceptable and engaging technology?

Approach:

- 4 living labs (practical schools) in which participatory action research takes place



# Definition participatory research

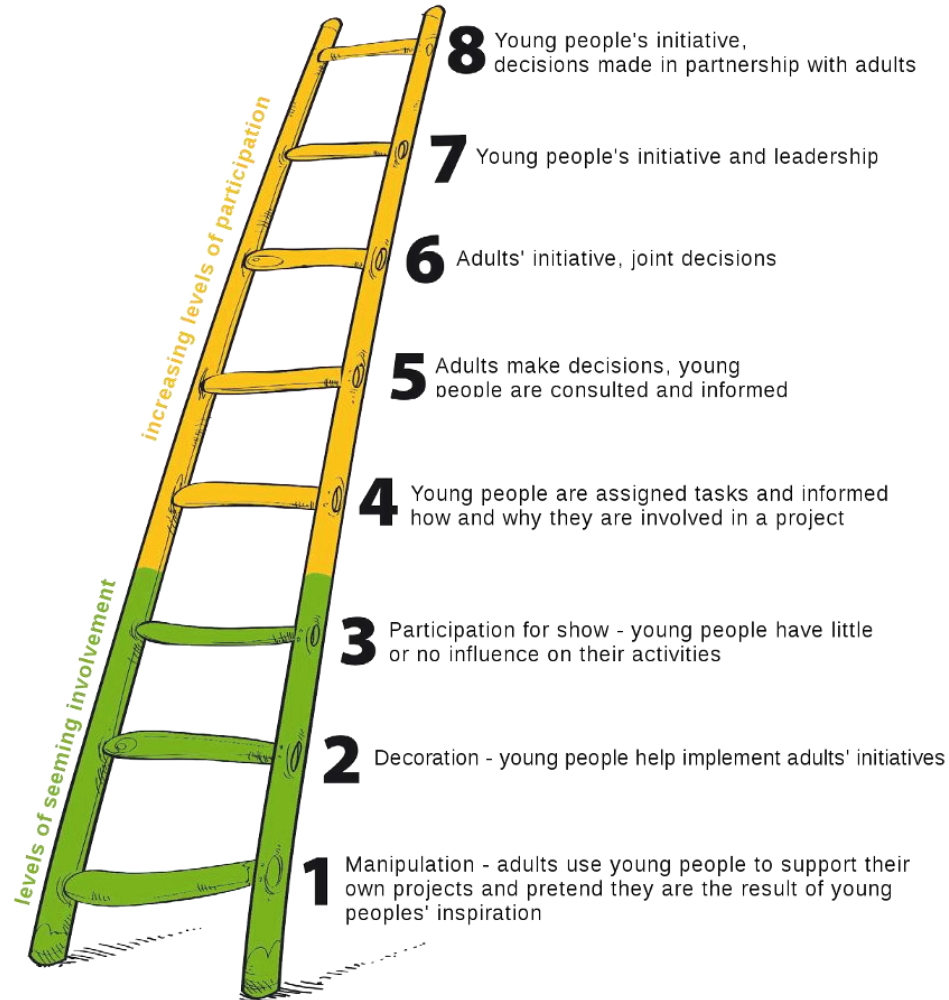
- **Participatory research:** research that involves those being researched in the decision-making and conduct of the research, including project planning, research design, data collection and analysis, and/or the distribution and application of research findings (Bourke, 2009).
  
- Or... “It’s about **attitudes and values**”

# Why?


- To create results that align with participants' needs and wishes
- To increase ownership
- To enhance empowerment



# Level of youth participation (Hart, 1992)



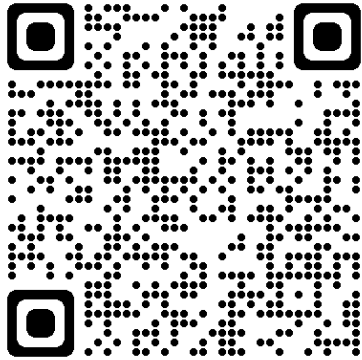
# Challenges and solutions

- At each living lab, a 'research team' consisting of students, parents, teachers, health practitioners, tech specialists, and researchers will work on a needs assessment and subsequently on the co-design, co-implementation and co-evaluation of health innovations
- It will be challenging... 
- What tips do you have for the researchers?

# Thank you

More info:

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**PROFEEL: A PERSONALIZED EHEALTH APPROACH TO FATIGUE IN YOUNG PEOPLE WITH CHRONIC CONDITIONS.**


#PHC23



**Sanne Nijhof**  
UMCU



**Maartje Stutvoet**  
UMCU



# **PROFEEL** PERSONALISED EHEALTH PATH FOR FATIGUE IN ADOLESCENTS WITH CHRONIC CONDITIONS

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**UMC Utrecht**  
Wilhelmina Kinderziekenhuis

**Dr. Sanne Nijhof & drs. Maartje  
Stutvoet**

7th of December 2023



CONFLICTS OF INTEREST: NONE

## Project part of the eHealth Junior Consortium

“Feeling good, despite illness; Accessible eHealth supporting the wellbeing of chronically ill children.”

Funded by the Netherlands Organization for Scientific Research (NWO)





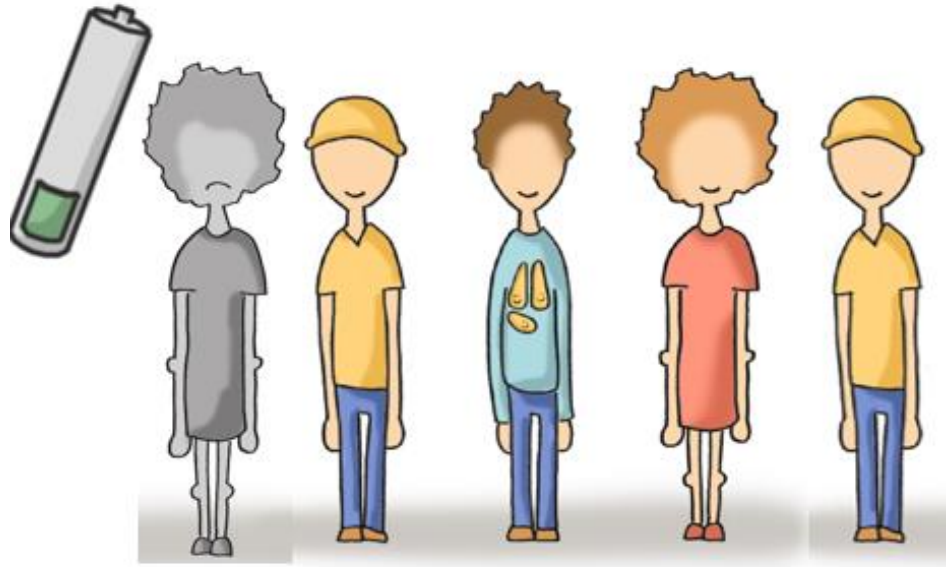
# WHY FATIGUE?

## HOW

## WHAT



## SEVERE FATIGUE



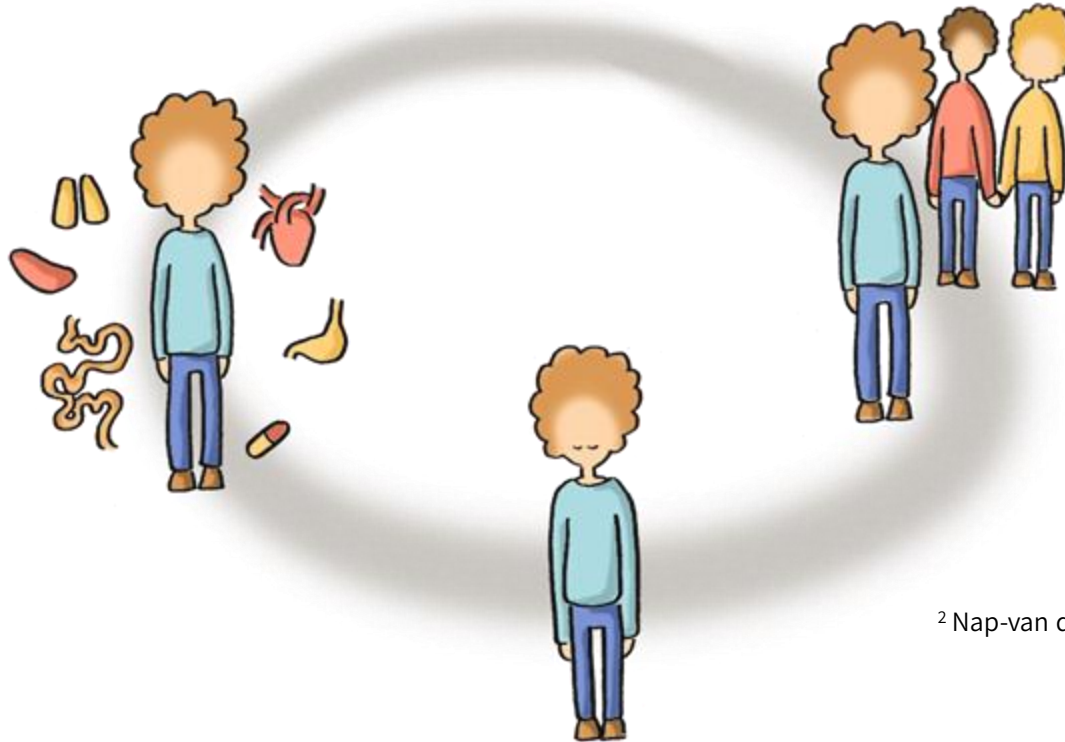
**1 in 5 children with a chronic health condition**

<sup>1</sup> Nap-van der Vlist et al. (2019)

TRANSDIAGNOSTIC, MULTIFACTORIAL & INDIVIDUAL DIFFERENCES

## PROfeel

transdiagnostic, holistic & personalised



<sup>2</sup> Nap-van der Vlist et al. (2021)

The background is a solid light blue color. It is decorated with various white line-art icons scattered throughout. These icons include gears of different sizes, lightbulbs with a lightning bolt inside, smartphones with grid patterns on their screens, and stylized human figures. Some figures are simple outlines, while others have a cross on their chest, suggesting a medical or healthcare theme. The overall aesthetic is clean and modern.

**WHY  
HOW DOES PROFEEL  
WORK?  
WHAT**

# PROFEEL PATH

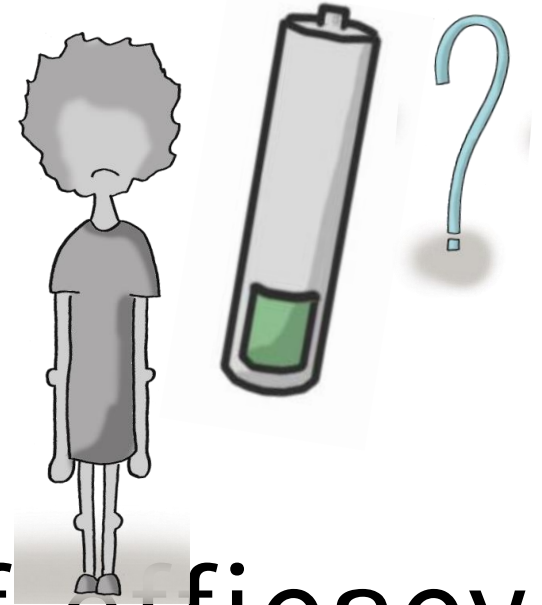
Personalised blended care trajectory

Adolescents (12 - 18 years)

- Chronic health condition
- Hindered by fatigue

**Goal: Grip on fatigue**

By insight into complaints & modifiable factors  
Subsequent life style change



↑ self-efficacy  
↓ fatigue ↑ quality of life

## PROFEEL PATH



5 questionnaires  
a day for 4 weeks



PROfeel2 vragenlijst 1

Afgelopen 3 uur was ik **vermoeid**:

Erg

VORIGE VOLGENDE

1. Measure



## PROFEEL PATH



5 questionnaires  
a day for 4 weeks



Personal insights  
in the lifestyle  
factors impacting  
fatigue

1. Measure



2. Know



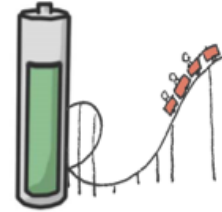
## PROFEEL PATH



5 questionnaires  
a day for 4 weeks



Personal insights  
in the lifestyle  
factors impacting  
fatigue



Change your lifestyle to  
have energy for the  
things that you value.

1. Measure



2. Know



3. Experiment



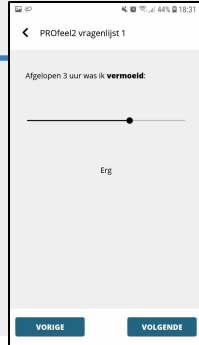


# PROFEEL PATH | EVALUATION

Feasible and useful <sup>3</sup>Nap-van der Vlist et al. (2021)

Small to clinically relevant improvement <sup>4</sup>Vroegindeweyj et al. (2022)

Compliance 71%  
[16 - 99%]  
Motivation drops in time



Lifestyle change difficult

1. Measure




2. Know



3. Experiment



The background is a solid light blue color. It is decorated with various white line-art icons scattered throughout. These icons include gears of different sizes, lightbulbs with a lightning bolt inside, smartphones with grid patterns on their screens, and stylized human figures. Some figures are simple outlines, while others have a cross on their chest, suggesting medical or healthcare professionals. The overall theme is technology, innovation, and human impact.

**WHY  
HOW  
WHAT IS IN THE  
MAKING?**



## Semi-structured interviews

- N=20
- Former users PROfeel 1.0 & their parents
- Goal: evaluation use



## Focus groups

## Development iterations





- **Level of complaints = motivation**
- *But also: helping others (research)*

But I did suffer a lot from my fatigue, so...I really did want to do it well in the hope that that would have an effect too  
*25 years old women*



- **Effect: gaining insight**
- *Behavioural change if in line with values of importance*
  
- **(Developing) independence**
- *Small role for parents in proces*

That she started to understand things. And maybe got to know her body better, or realised: oh **if I do this, then....** Especially if you keep going normally, you never realise that. ... But once you see it on paper, you see, **facts**

[...]

I can say whatever I want. The **most important thing is for her to be able to work on it herself.** ... Because she has to accept it. I can give her advice, but that ... Especially with teenagers, well, good luck.

*Mother of 17-year-old daughter*



## Semi-structured interviews

Progression, larger goal, independent



## Focus groups



## Development iterations



## Semi-structured interviews

Progression, larger goal, independent



Focus groups : ideate → enhance motivation?

Development iterations  
**define - develop - test**

Personalization, personalization





## PROFEEL 2.0 | IN THE MAKING



Personalisation  
Progression insight

1. Measure



2. Know



3. Experiment





## PROFEEF 2.0 | IN THE MAKING



Personalisation  
Progression insight

Goal settings module  
My Dream  
Tracking of complaints



1. Measure



2. Know



3. Experiment

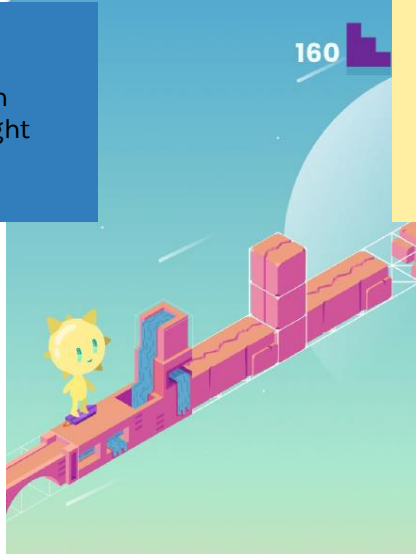


# PROFEEF 2.0 | IN THE MAKING



Mini game, diary, style

Personalisation  
Progression insight



Goal settings module  
My Dream  
Tracking of complaints



1. Measure



2. Know



3. Experiment



## CONCLUSION

### **PROfeel Path: personalised transdiagnostic approach to fatigue**

- Feasible to fill out questionnaires, insightful
  - Motivated by complaints
- Enhancing motivation by gamification & personalisation
  - Participatory design process

### **Next steps: single case studies (N-1 trial)**

- Efficacy of PROfeel 2.0
  - Effective elements?
- Qualitative evaluation (incl. new app)

# Thank you for your attention!

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## UMC Utrecht:

Jojo van der Plaats  
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Emma Berkelbach-van der  
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Anne Hoefnagels  
Emmie Koevoets  
Sanne Nijhof  
Elise van de Putte

## University of Utrecht:

Dionysis Alexandridis  
Remco Veltkamp

## HKU:

Joanneke Weerdmeester

## NHL Stenden:

Job van 't Veer

## TU Delft:

Dajung Kim  
Valentijn Visch

## Tilburg University & Fontys:

Inge Braspenning  
Eveline Wouters  
Inge Bongers

## Erasmus MC:

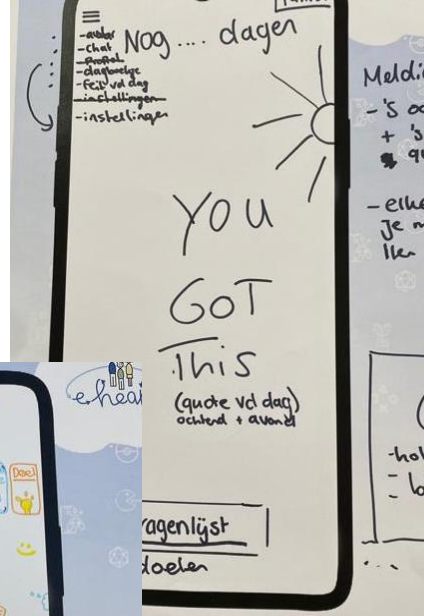
Marije van Dalen  
Loes Keijzers  
Manon Hillegers

## IJsfontein:

Annelies Wisse  
Jan Willem Huisman

## Other:

Jan Houtveen  
Merijn Mesdagh



## REFERENCES

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# GAMIFIED TRAINING OF THE BRAIN FUNCTIONS OF CHILDREN WITH COGNITIVE CHALLENGES

#PHC23



**Maurits Overmans**  
Aristotle Technologies

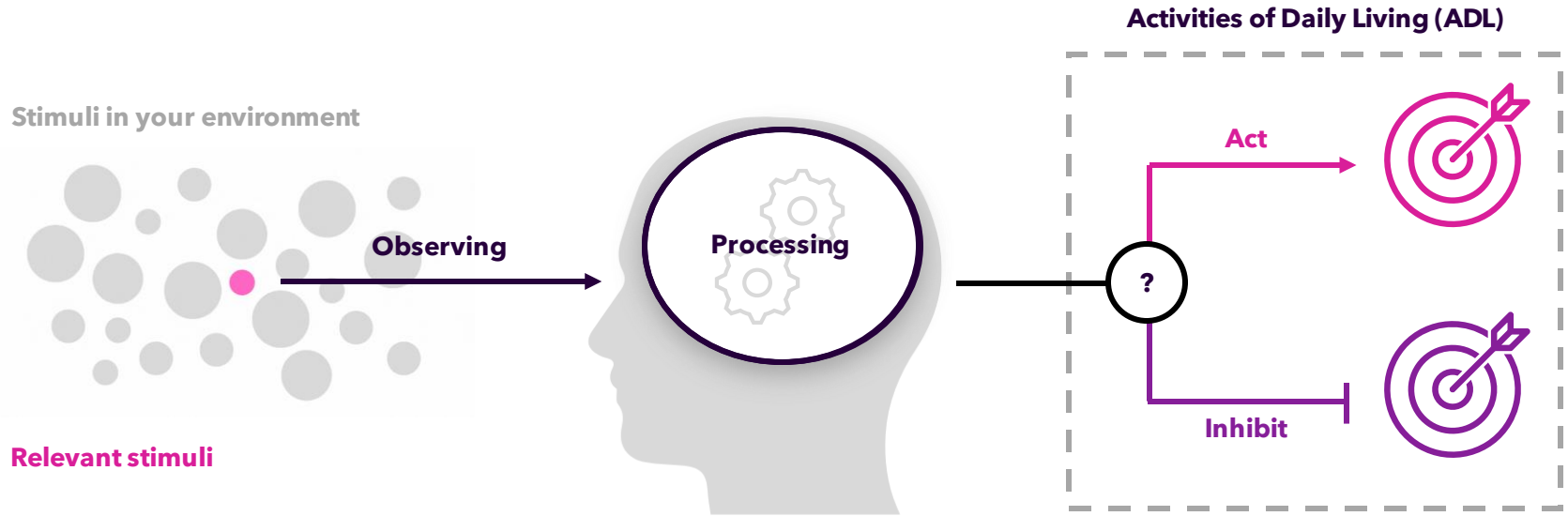


# ARISTOTLE

## COGNITIVE TECHNOLOGIES

**Tailored & Gamified Cognitive Training**

# What is cognition? | The brain functions needed to perform ADLs







**1 out of 6 individuals  
worldwide are  
hindered in their  
personal  
and professional lives  
by information  
overload**

# Our mission

To improve the daily functioning of **1 million people** with cognitive challenges by the year of **2030**



**(Professional) Sports organizations**



**Geriatric physiotherapy and occupational therapy**



**Special Education**

# Information overload in education| What is the situation?



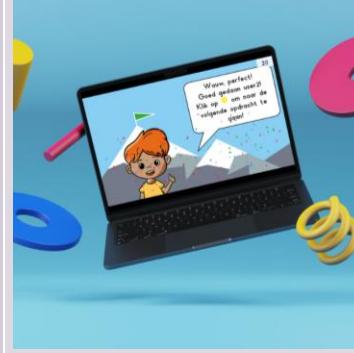
**Crowded classes require teachers to divide their attention equally. Some children require more**



**The added support is not provided in regular education, the child feels left behind and engages less in class**



**Special education offers the additional support to learn and develop based on the needs of the child**

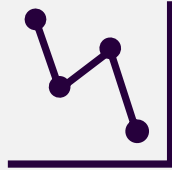


**The *Aristotle tool* helps to gamify learning and development. This is done to stimulate ADLs**

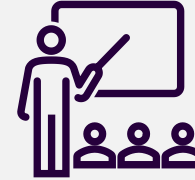


**Improved learning and behavioral functioning goes hand in hand with building confidence and increased QoL**

# Validated Problems | What do our customers struggle with?



**Lack of data insights that are directly available** to guide individual development **during sessions**. Data reports that are currently provided are too complex, this increases workload.



Current methods create **a high dependency on set training programs**. This leads to a significant **increase in the workload** of trainers

## Transformative changes required

Adaptive training sessions with supporting, understandable data and flexible training frequencies

# Market Adoption | Proven Partnership model

## (Professional) Sports organizations



"At PSV, cognition has now acquired a permanent place on the weekly agenda. Players indicate that they get better on the field through cognitive training. *They notice that it makes a difference.* It has become part of the organization, of the program"

Jurrit Sanders, Head youth academy sport scientist at PSV

## Geriatric physiotherapy and occupational therapy



"Cognition and movement are essential components for proper functioning. Training cognition and movement using *one functional digital tool is unique and already offers great results for rehabilitation, training, and performance.*"

Thijs van Hoof en Annemarie Pollmann, Van Hoof Centrum Voor Therapie & Gezondheid

## Special education



"There is a big challenge because with neurological learning and developmental disorders are threatened in their learning by brain-related problems. *The earlier training tailored to the brain can be started, the greater and broader the effect on learning performance and behaviour later in life.*"

Dr. Jos Hendriksen, clinical neuropsychologist Kempenhaeghe

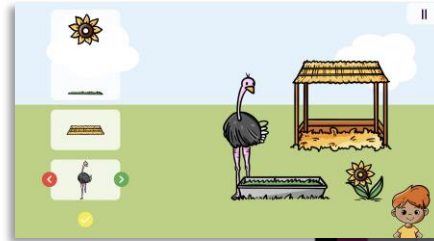
A person is seen from behind, sitting on a bed and using a laptop. The laptop screen displays a software interface with various icons and a diagram. The entire image is overlaid with a semi-transparent purple filter. The person's hands are visible on the laptop keyboard.

# Product

Aristotle Cognitive Technologies provides innovative, data-driven tools and effective methods to train brain functions in the context of their activities of daily living, both personal and professional.

# Product | Innovative, data-driven tools and effective methods

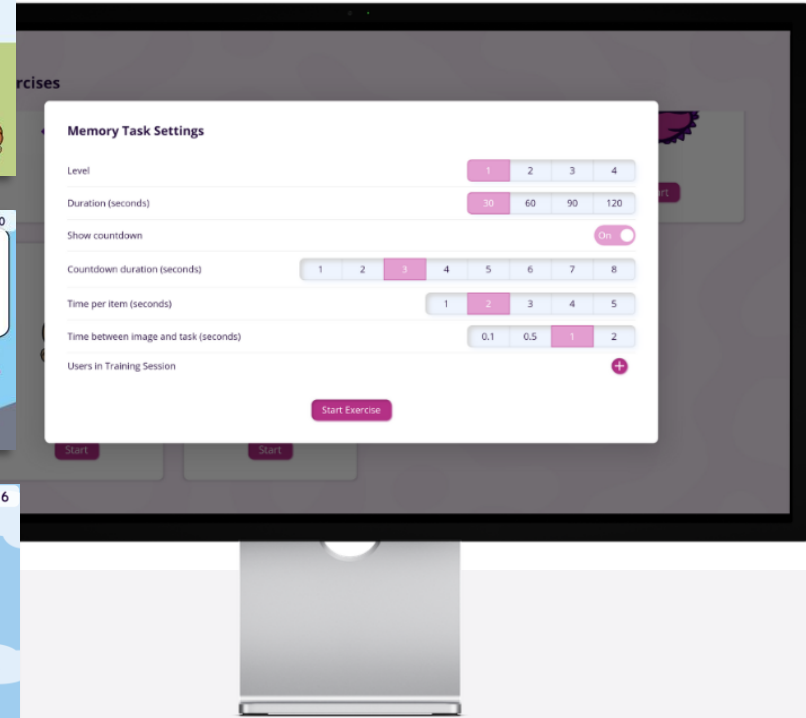
The user gets assigned a personal profile, under supervision of expert



Tailored exercises are provided in multiple cognitive domains (i.e. attention, working memory, and inhibitory control)



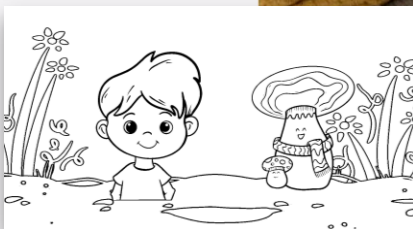
The level of complexity of the training is adapted based on performance and goals



**Gamified development of learning strategies that help their ADLs**

**Constant feedback is provided, which is directly implementable**

**Online and offline engagement for increased transfer of training**







# ARISTOTLE

## COGNITIVE TECHNOLOGIES

**Tailored & Gamified Cognitive Training**

# BREAKOUT SESSION – HEALTHY START

#PHC23



**Yuan Lu**  
TU/e



# BREAKOUT WORKSHOP

## HEALTHY START

EXPLORING INNOVATIVE  
APPROACHES TO HEALTH AND  
EDUCATION EQUITY FOR  
CHILDREN AND ADOLESCENTS



**14 PREVENTIVE  
HEALTH**

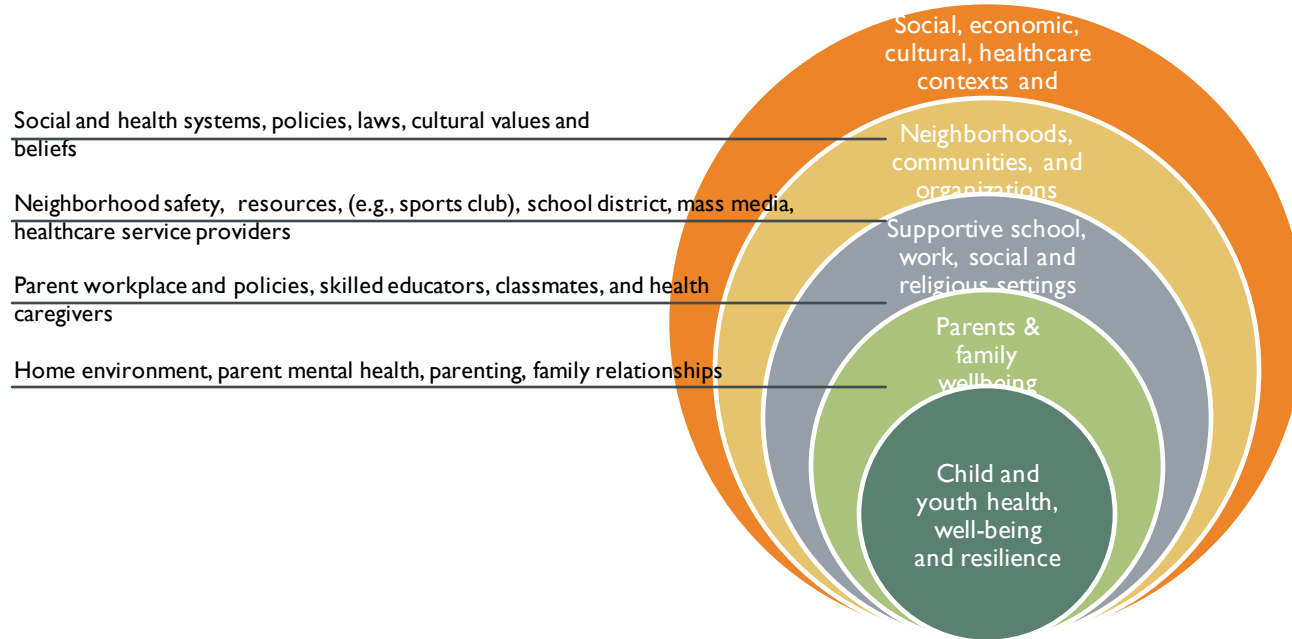
**TU/e** EINDHOVEN  
UNIVERSITY OF  
TECHNOLOGY

 **WAGENINGEN**  
UNIVERSITY & RESEARCH

 **Utrecht**  
University

 **UMC Utrecht**

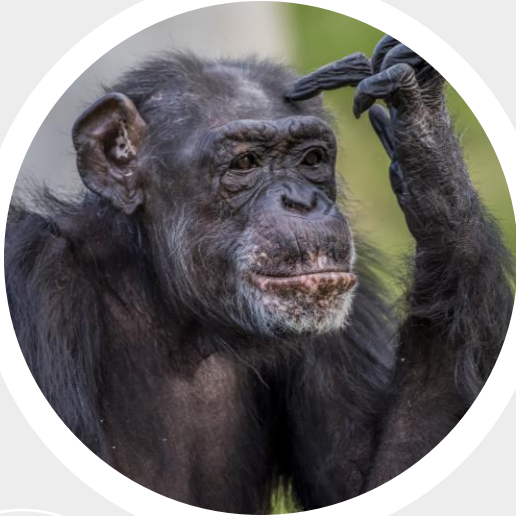
# THE ECOLOGICAL MODEL OF THE HEALTH AND WELLBEING OF CHILDREN AND ADOLESCENTS



# WORKSHOP PROTOCOL

- Organize a table discussion for each project with the four presenters
- Discuss with the participants at the table where the chosen project approach can be mapped (8 min)
- Take 5 min individually to reflect on how your (and your organization's) competencies can contribute to the further development of this project in terms of research and innovation –
  - What can you bring to the project with your (and your organization's) competencies? You may consider the contribution to focus on extending, expanding, and upscaling the impact of the current project.
- Extending can mean further developing and realizing.
- Expanding can mean not just for the targeted children or adolescents but also their caregivers, their surroundings
- Upscaling can mean not just for the current region, but also include other regions, national or internal markets.
- Share your post-in notes with the participants and leave your post-it notes on the maps (7 min)
- Feel invited to reach out to each other and explore the possible future collaboration after this workshop!

# KEYNOTE SESSION



## **14:55 – 15:45 Keynote Session Monkey See, Monkey Do: coexistence versus cooperation in an organizational perspective**

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