



**Hanzehogeschool
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Start(V)aardig: developing and testing an 18-week motor skill school intervention for 4-6-year-old children

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START(V)AARDIG

Background

- Decreased fundamental motor skills (FMS) levels in young children (Barnett, et al. 2016).
- Start(v)aardig aims to help professionals (PE-teachers, community sports coaches, etc.) to stimulate the FMS and fun experiences of 4-6-year-old children.
- Translation of the knowledge in a practical toolbox for professionals and in education modules for teacher training education in PE.



Overview Start(v)aardig

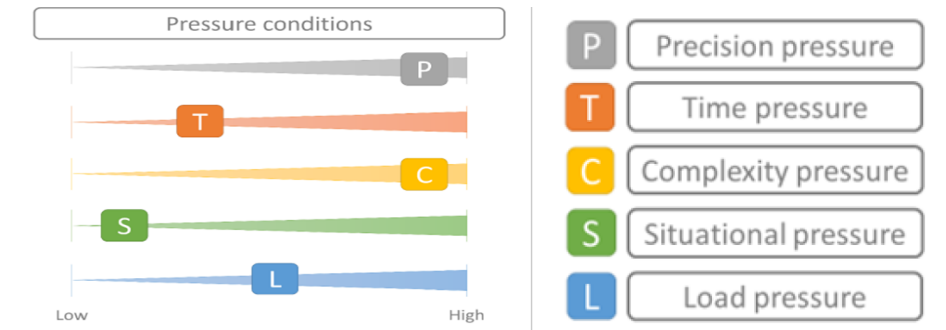
	2019-2020	2020-2021	2021-2022	2022-2023
WP1 <ul style="list-style-type: none"> FMS BMI Fun 	$N_{\text{schools}}=36$ $N_{\text{children}}=1708$ Grade 1,2*	$N_{\text{schools}}=37$ $N_{\text{children}}=2876$ Grade 1,2,3	$N_{\text{schools}}=37$ $N_{\text{children}}=3514$ Grade 1,2,3,4	
WP2 <ul style="list-style-type: none"> GPS Accelerometers 		$N_{\text{schools}}=15$ $N_{\text{children}}=300$		
WP3 18-weeks intervention			$N_{\text{schools}}=2$ $N_{\text{children}}=44$	$N_{\text{schools}}=2$ $N_{\text{children}}=50$

* The Dutch educational system: Grade 1 ≈ 4 year old, grade 2 ≈ 5-year olds, grade, 3≈ year olds, grade 4 ≈ 7 year olds

School intervention – 4-6-years old

Criteria for development

- Developed from a teacher perspective: usability and fun are important
- Athletic Skills Model (Hoofwijk et al., 2020).
- A combination of deliberate play & practice
- Differentiation: 3 levels, 'pressure conditions' (Scheuer & Heck, 2020)
- Maximize practice time





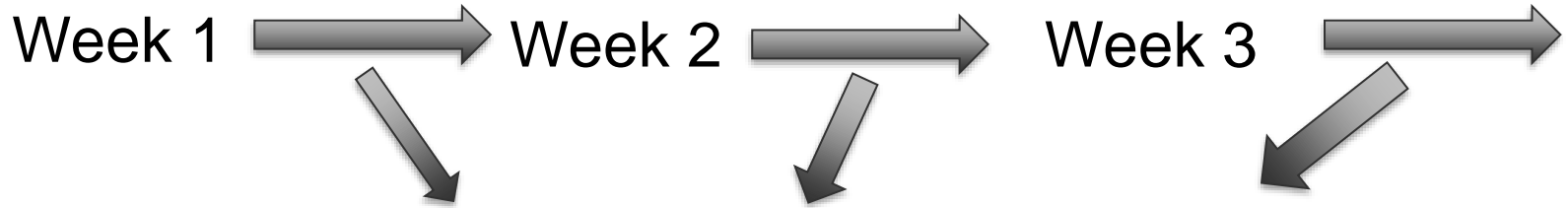
Structure of the 18-week intervention

Deliberate practice

Deliberate play

Planning	Thema	Intro	situation 1	Situation 2	Situation 3
Week 1	Circus	Moving to music	Rolling, tumbling, turning	throwing & catching	Moving & locomotion
Week 2	Circus	Moving to music	Balancing & falling	Rolling, tumbling, turning	throwing & catching
Week 3	Circus	Moving to music	Romping & fighting	Balancing & falling	Rolling, tumbling, turning
Week 4	Zoo	Moving to music	Climbing & scrambling	Romping & fighting	Balancing & falling
Week 5	Zoo	Moving to music	Kicking & shooting	Climbing & scrambling	Romping & fighting
Week 6	Zoo	Moving to music	Swinging	Kicking & shooting	Climbing & scrambling

Iterative development proces



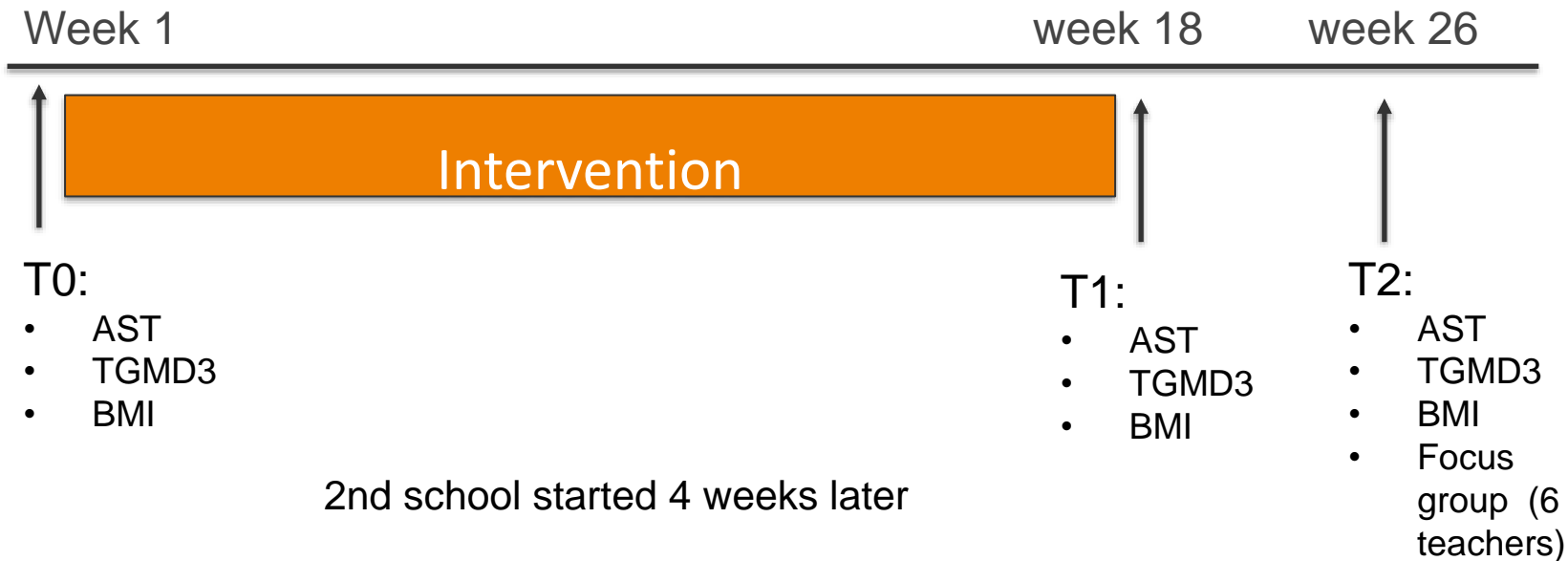
Every week we developed the next lesson using:

- Input of experts in a particular skill
- The input of the diary filled in by the PE-teacher
- Feedback from the children (smileys)



Method

44 children (Mage = 4,97 ± 0,57 years)



Every lesson:

- Diary PE-teacher
- Level of fun of the children measured with smileys

Results

Children became faster on the Athletic skills track: The time on the AST decreased significantly over the three test moments ($F(2, 68) = 14,250, p < .001$).

Children improved on the TGMD. Further analysis showed that both locomotor skills $F(2,68) = 38,928, p < 0.001$) and Object control $F(2,68) = 3,243, p < 0.05$ improves significantly.

Interview results

- “If you repeat a skill for three weeks, children do really improve”
- “The lessons gave us the language to give effective and simple instructions”
- “The layout of the lessons made sure they moved a lot.”
- “Children chose if they just wanted to play or spent more time on practising a skill based on the instruction we provided”
- “Romping and fighting were most popular, while i thought it would be dangerous”
- “We think the lessons work and are fun, however, the materials take a lot of time to prepare and we are afraid someday we will stop using them”

Discussion

- The program is an improvement on the existing PE-lessons
- Children improve on the skills they practice
- Children improve on the motor tests, however, this is not yet compared to a control group. Also, further statistical analysis needs to be done to examine which skills improve most.
- Teachers like the inspiration, the structure, the lessons and the guidelines the program divides.
- The usability needs to be further improved, teachers need the physical examples and are afraid it will be too difficult to prepare every week.

The future

- The research will be repeated with a control group
 - However, the qualitative research methods may be more valuable
- The usability will be improved with video's and additional instructions
- The project will continue:
 - The goal is to develop lessons for older children using the same approach
 - Additional activities for the breaks will be developed