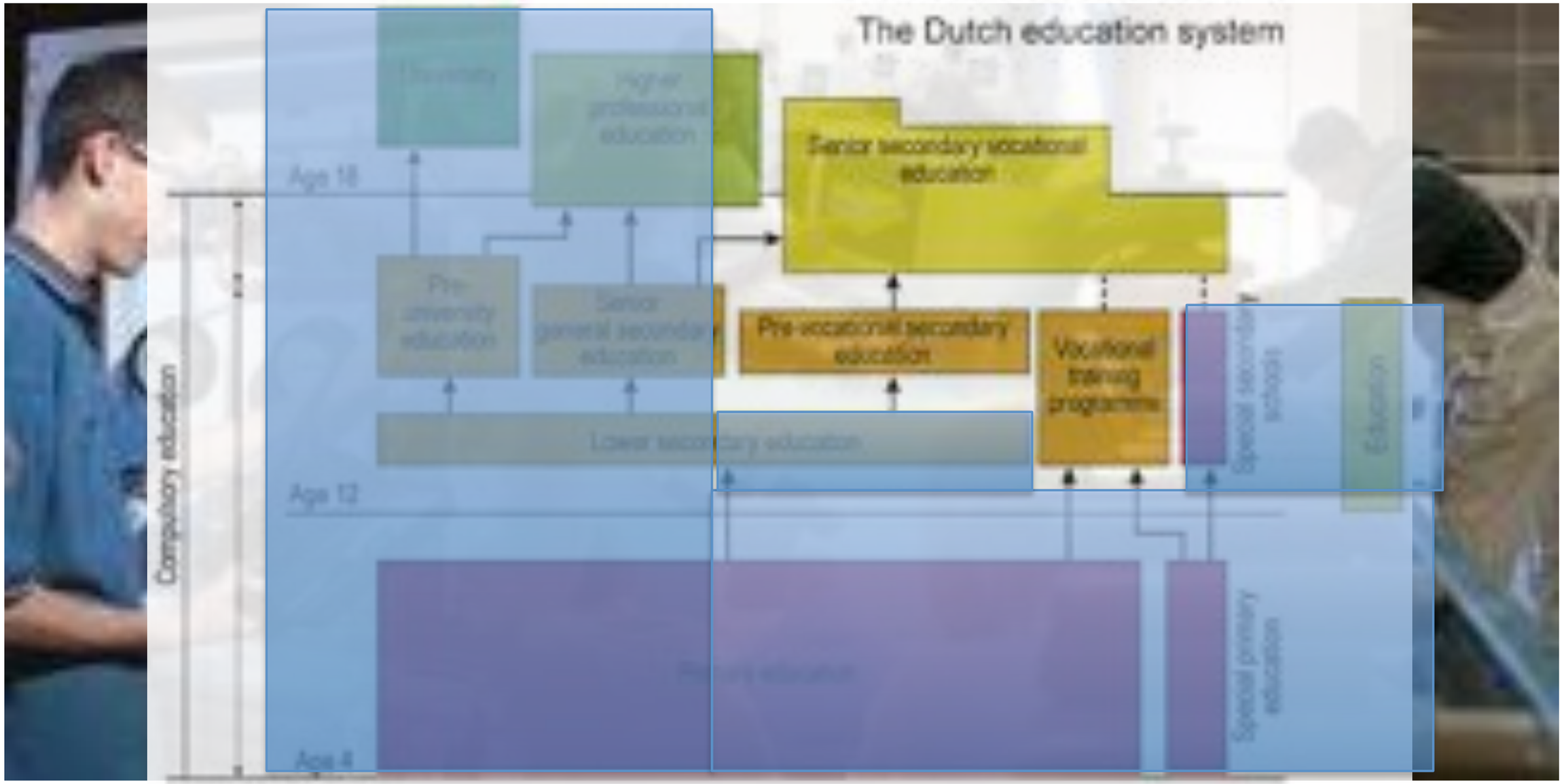
Teaching for improved learning in vocational education



The Netherlands Educational Research Association (VOR: division Learning & Instruction)
2013 AERA Annual meeting invited symposium, San Francisco April 27-May 1

presenters

Integration of academic and vocational disciplines Reasons for action in practice
Martijn van Schaik
University of Applied Sciences Amsterdam, School of Education.

How teachers in vocational education interpret their teacher-student interactions in terms of educational values and ideals
Carlos van Kan, Ilya Zitter, Barbara van Wijk & Patricia Brouwer, Centre for Expertise in Vocational Education and Training (ecbo), Utrecht.

How teachers learn to scaffold and how scaffolding affects students' achievement and engagement: An experimental classroom study
Janneke van de Pol, Monique Volman, Frans Oort, Jos Beishuizen
Utrecht University (UU), University of Amsterdam (UvA), VU University Amsterdam (VU)

Teachers' practice in preparatory secondary vocational education: A mixture of teacher control, and stimulating self-regulation.
Jantine van Beek, Alexander Minnearts, Theo Wubbels & Frank de Jong
Stoas Wageningen Vilentum University of Applied Sciences, Groningen
University, Utrecht University,

Integration of academic & vocational discplines

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Integration of academic and vocational disciplines

Reasons for action in practice

VOR L&I

[Netherlands Educational Research Association DIV Learning & Instruction]

AERA 2013

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Overview

- Final intervention at 4 schools in DRB project
- Video method
- Web of reasons and knowledge
- Reasons for action in practice: levels of integration
- Video episodes
- Discussion

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The DBR

Design based research in 3 phases:

- Case study (06/07)
- Intervention I at 2 schools (07/08)
- Intervention II at 4 schools (08/09)

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The case

- Intervention II:

  Design and construct a tandem tricycle

  Guided co-construction

  Preparatory secondary vocational education (PVSE)

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The case

Method:

DBR: assignment for students, tools for teachers to implement

qualitative: interviews, observations (all video)

quantitative (phase 2/3):

pre- and posttests

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The case

Earlier studies:

Designing by students leads to better understanding

Teachers should simulate ‘real’ design process

Models/drawings as tools between theory and practice

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The case

Web of reasons

"the complex of interconnected reasons, premises and implications, causes and effects, motives for action and activity, and utility of tools for particular purposes that are at stake in particular situations"

(Bakker & Akkerman, submitted)

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Levels of integration

Table 1

Levels of knowledge integration used as codes in the data analysis (derived from Bakker & Akkerman, submitted)

Level	Characterization
1	Statement about something scientific-mathematical/vocational *or* work-related but without explanation or reasoning
2	Reasoning or explanation with only scientific-mathematical/vocational *or* only work-related (non-theoretical) knowledge.
3	Statement in which a scientific-mathematical/vocational fact *and* a work-related fact are combined.
4	Reasoning with both scientific-mathematical/vocational *and* work-related knowledge

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The video

	video (hrs)	Schools	Students
Case study	30	1	6
First experiment	40	2	65
Final experiment	30	4	87

11	2

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Models in action

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Reasons for action

Table 3
Level of integration in utterances

	School 1				School 2				
Levels of integration	week 4	week 6	week 7	week 10	week 3	week 6	week 10	Week 10 (interview)	Presen-tation
Level 1	8	8	4	4		4		1	2
Level 2	1		1			3			1
Level 3						4		2	2
Level 4									

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Reasons for action

Typical statements and reasoning

Reasons for action

Teacher guidance

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Discussion

- Models and reasons fade after practical part of process starts:
  - how to maintain theoretical (level 3/4) reasoning ?
- What should be simulated:
  - academic practice
  - vocational practice ?

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