

Designing professional education for adaptive expertise; first case study results

EARLI conference

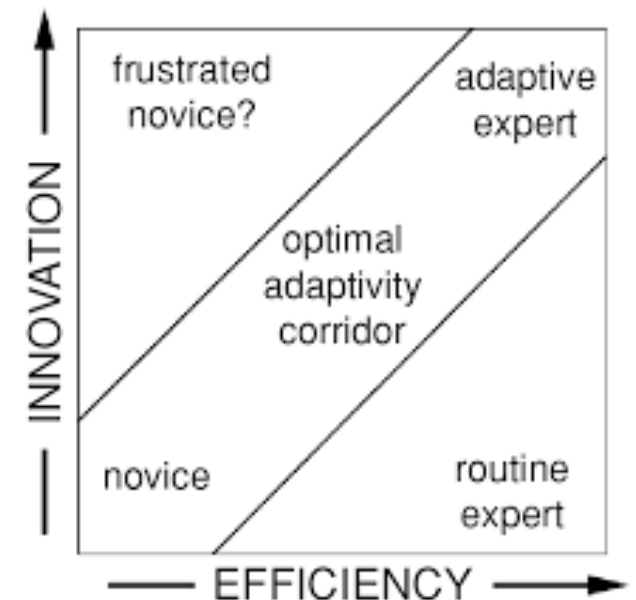
Thessaloniki, 23-08-2023

Loek Nieuwenhuis, Lia Fluit & Wietske Kuijer-Siebelink
(and many researchers from the partnership)

Adapt at work: an introduction



- NRO: practice-based research in higher education
- Essay Nieuwenhuis/Fluit 2019. Wanted: flexible experts
- Point of departure: flexibility/adaptivity is trainable ...
- ... even in initial BA/MA courses ...
- ... through open-end work-based programs.
- 11 universities (regular & applied) volunteered...
- ... with a running program targeted on AE



Social work



HAN UNIVERSITY
OF APPLIED SCIENCES

Dentistry and
oral hygiene

Radboudumc

Entrepreneurship

avans
university
of applied sciences

Sport



IT engineering



Built environment



Interprofessional
problem solving



Smart Solution
Semester



UNIVERSITY OF TWENTE.



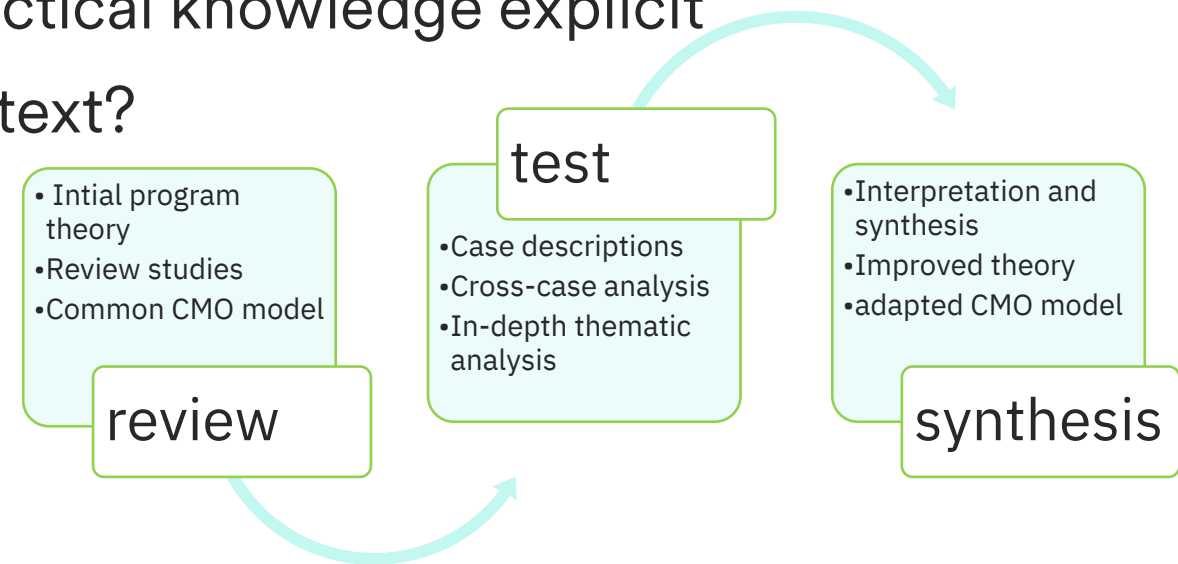
Teacher Education

Medical Engineering

Interprofessional
sustainability policies

A realist approach for design-based research

- Professional practices, including educational practices, are knowledge intensive
- Innovation is based on practical knowledge: how to improve practice?
- Practice-based research: making practical knowledge explicit
- What works, for whom, in which context?
Connecting practice theory and program theory
- Designers and workers are co-researchers
- CMO: context-mechanism-outcome chains
- Pending between the local and the general



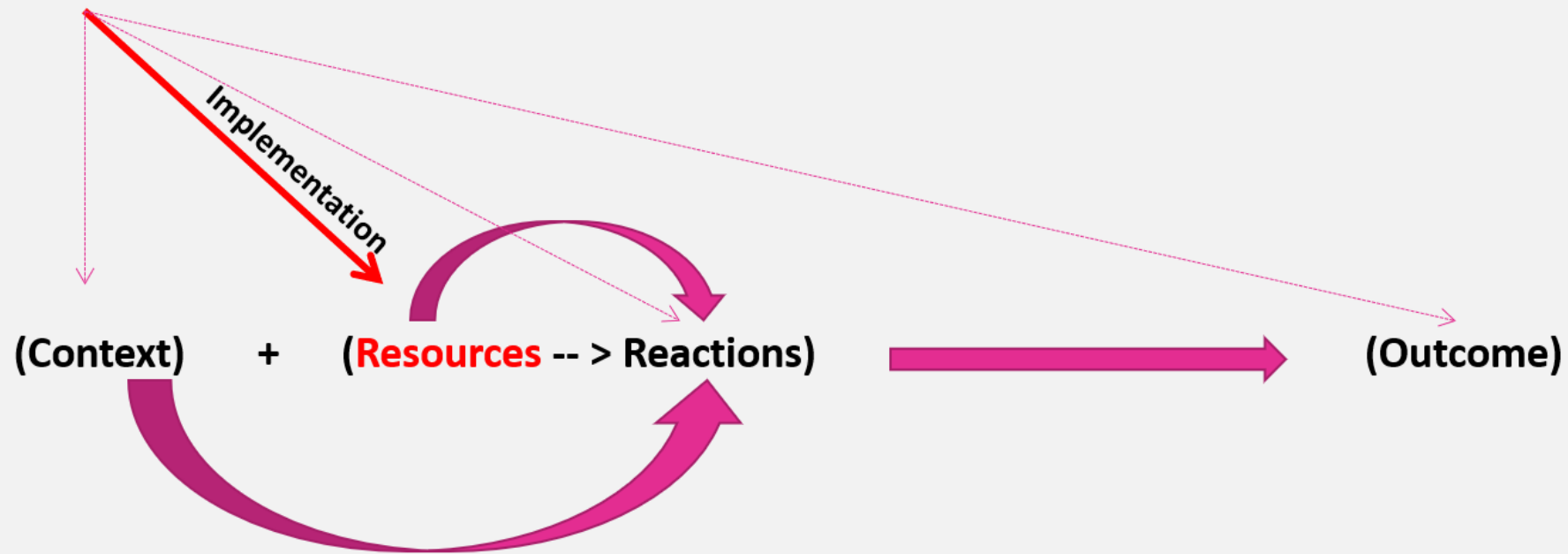
7 workpackages

1. Conceptual reviews:
 - review of reviews on adaptive expertise and adaptive performance
 - inventory of measurement approaches
2. Realist review on AE development in work-based learning
3. Developing case study methodology
- 4,6 Case studies and cross case analyses
5. 3 in-depth thematic studies:
 - task complexity;
 - educators' role;
 - teamwork and cross-boundary collaboration.
7. Dissemination and valorisation

Cross-case analysis: how we proceed

Implementation perspective

Intervention Theories (explain the causal nature of the programme architecture)



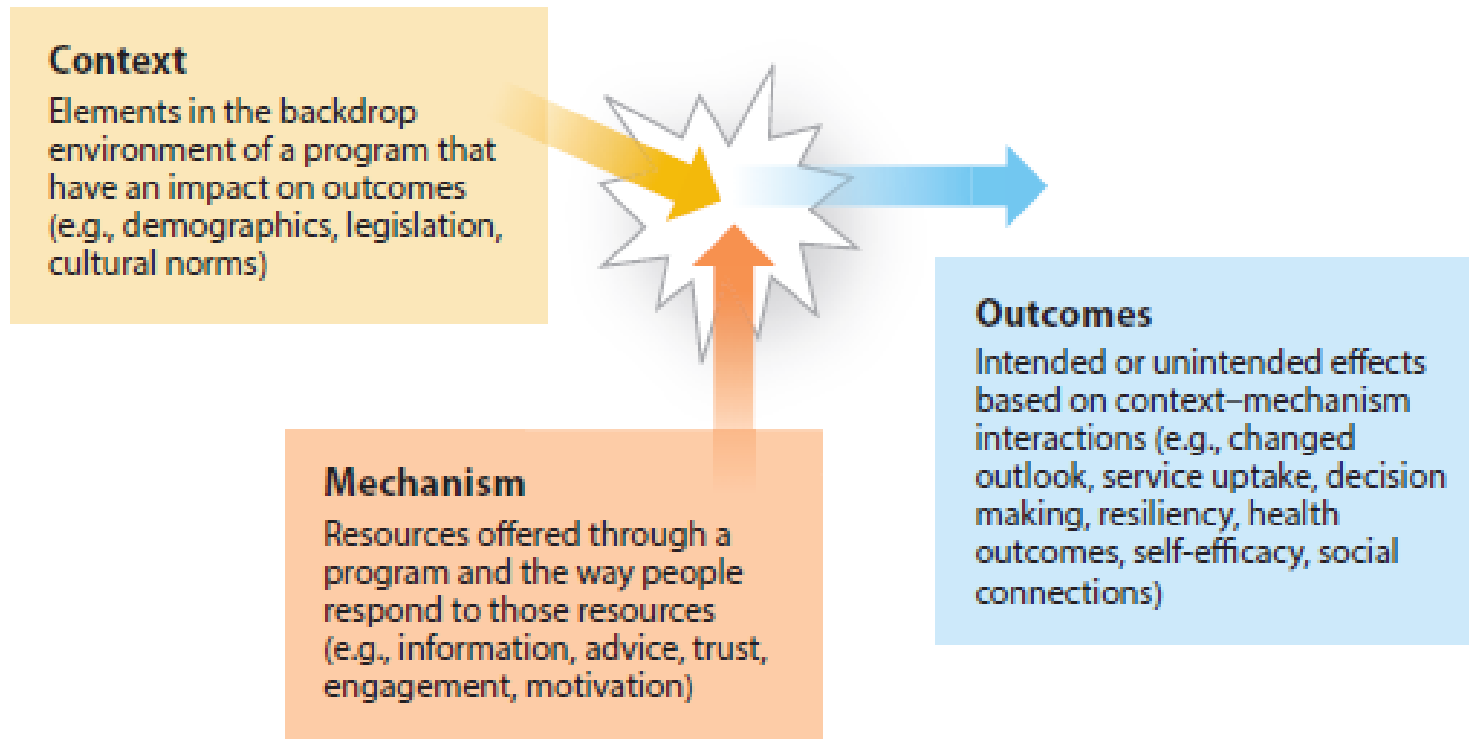
Introduction to Realist Methodology - Delivered by Justin Jagosh [Copy Permission Required]
02/03/2022

Central question

***What works, for whom, under what
circumstances and how
in the development of adaptive
expertise
in work-related contexts in Higher
Education***



De CMO configuration

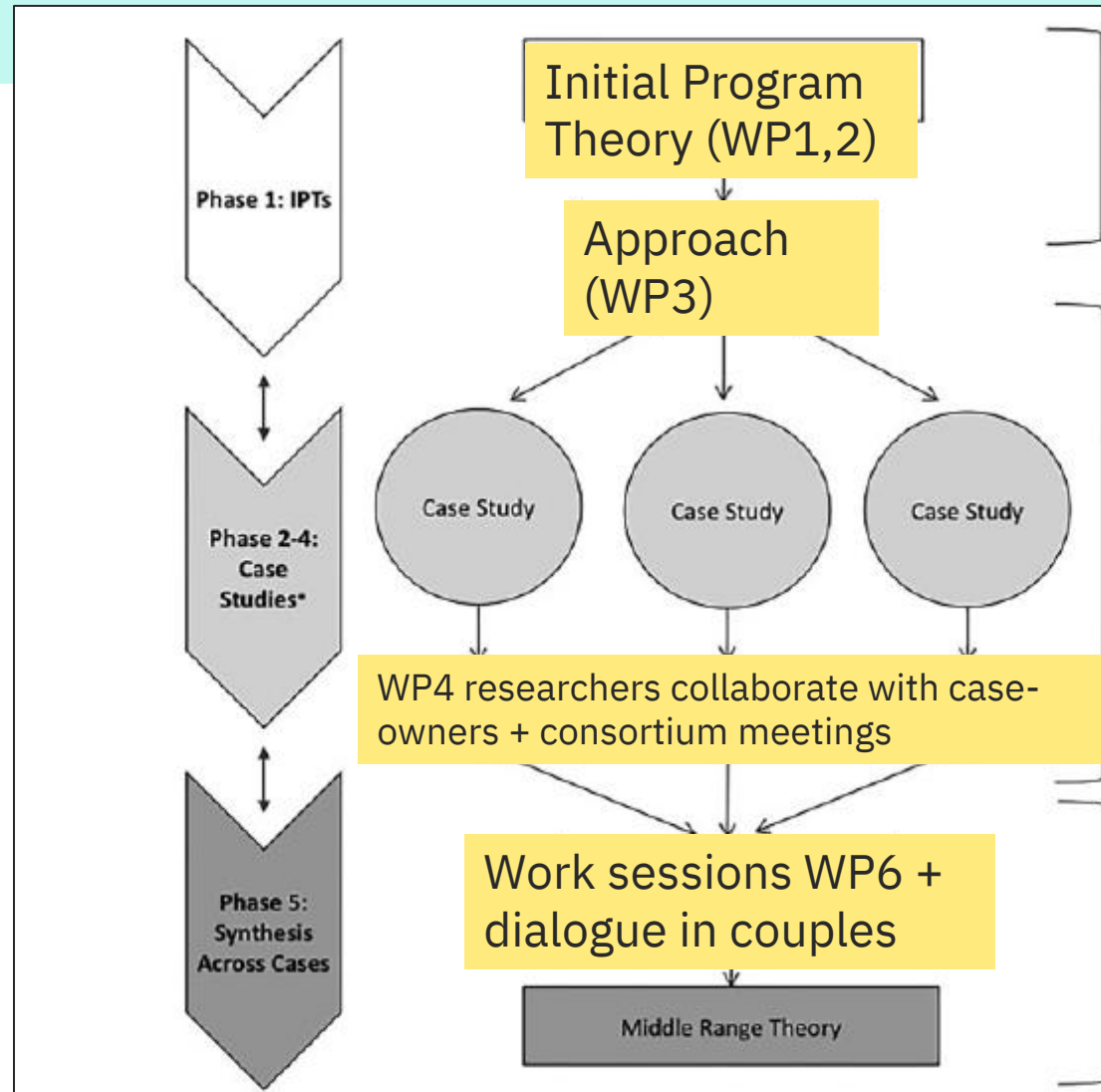


From: Jagosh (2019) Realist Synthesis for Public Health: Building an Ontologically Deep Understanding of How Programs Work, For Whom, and In Which Contexts. *Annual Review of Public Health*: Vol. 40
Adapted from Pawson, R & Tilley N (1997) *Realistic Evaluation*. Sage: London

Adapt at Work WP4 - mixed methods per case

- **Documentstudy**
- **Interviews with designers**
- **Interview with teachers**
- **Interview with students**
- **~~Pre-and post measurement students~~**

Data synthesis process



Gilmore et al., (2019)

Preliminary results: students' characteristics



IPT

*The hypothesis is that individual characteristics enable **reflection, sensemaking and reasoning** which is why students can make a **shift** to deal with the problem and **integrate and transform existing knowledge** to find new solutions or ways of working.*

*These individual characteristics allow them to **link** what they already know / don't know yet and to **integrate** old and new ideas.*

Refute/refinement

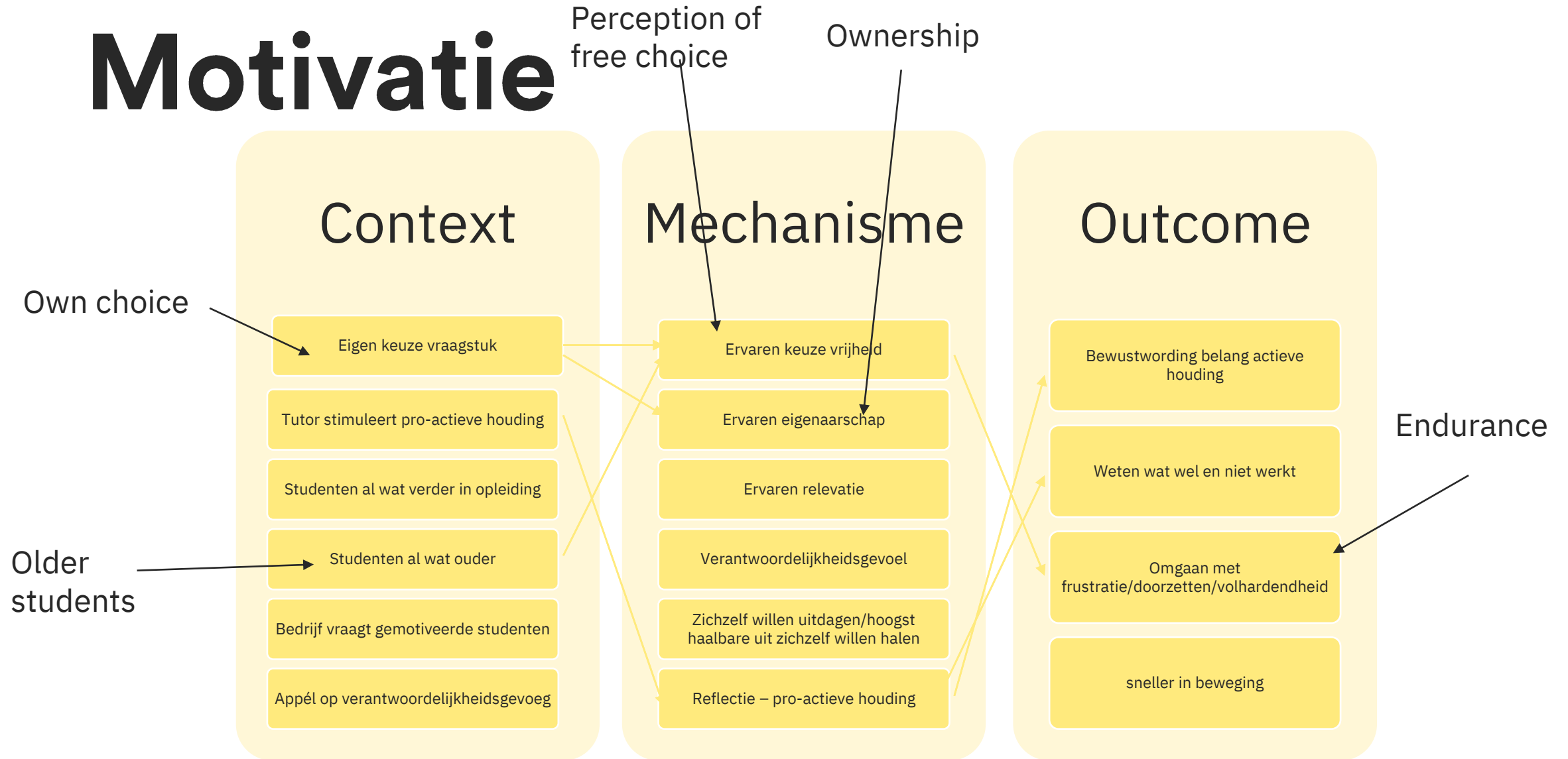
Refine:

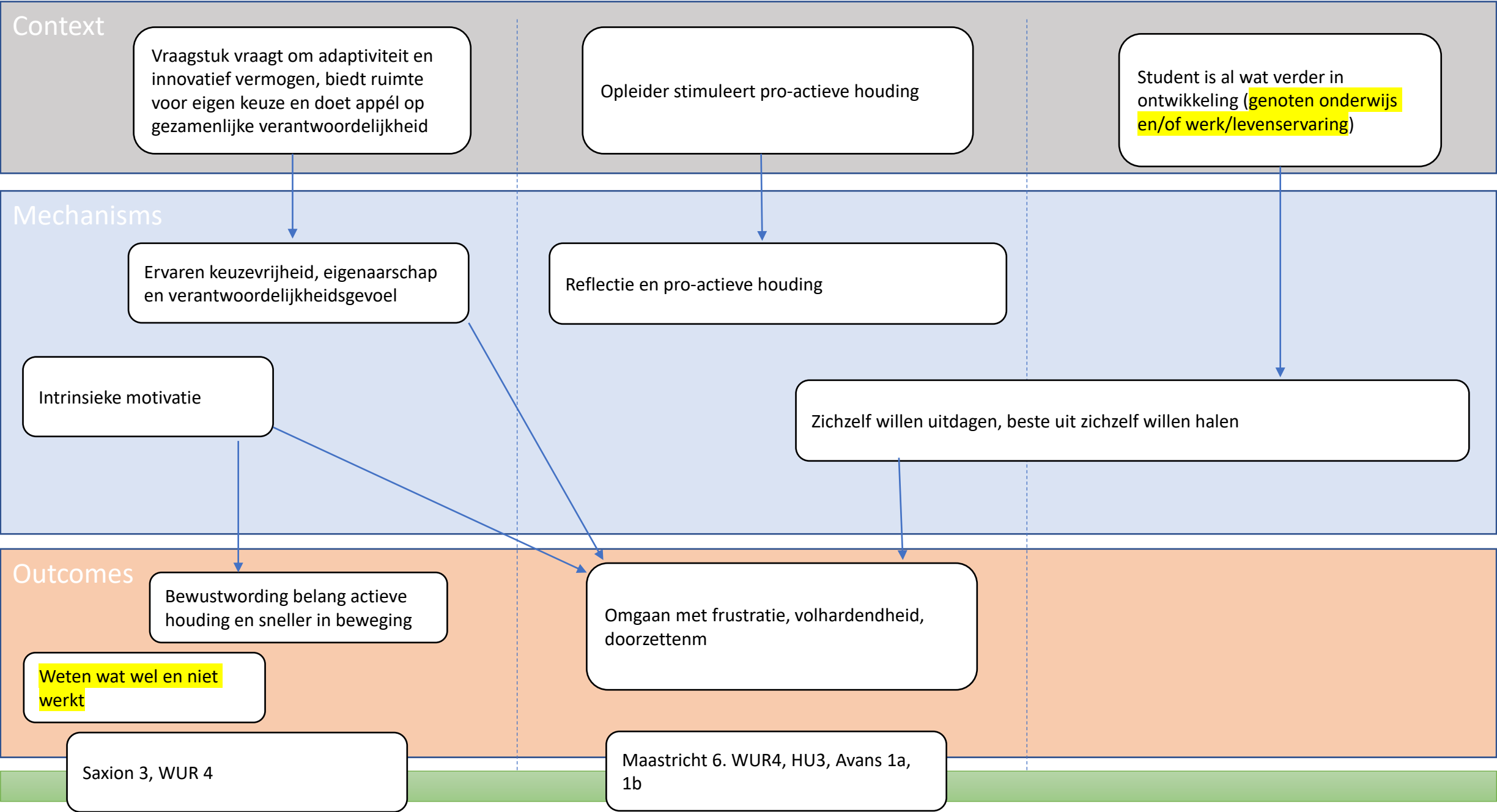
- Role of motivation
- Pro-active attitude
- Open-minded
- Previous experience (self-confidence and uncertainty)
- Sense of responsibility

Refute:

- Shift?

Motivatie





Preliminary results: authenticity and task complexity

IPT

*The hypothesis is that through **authentic situations, task complexity and degrees of freedom**, students end up continuously in situations, in which they have to learn to **navigate in difficult situations** and are challenged to **step out of their comfort zone**.*

*The assignment or task and learning environment offers room to **make mistakes** and to reflect on and **learn from these mistakes** and ways of working.*

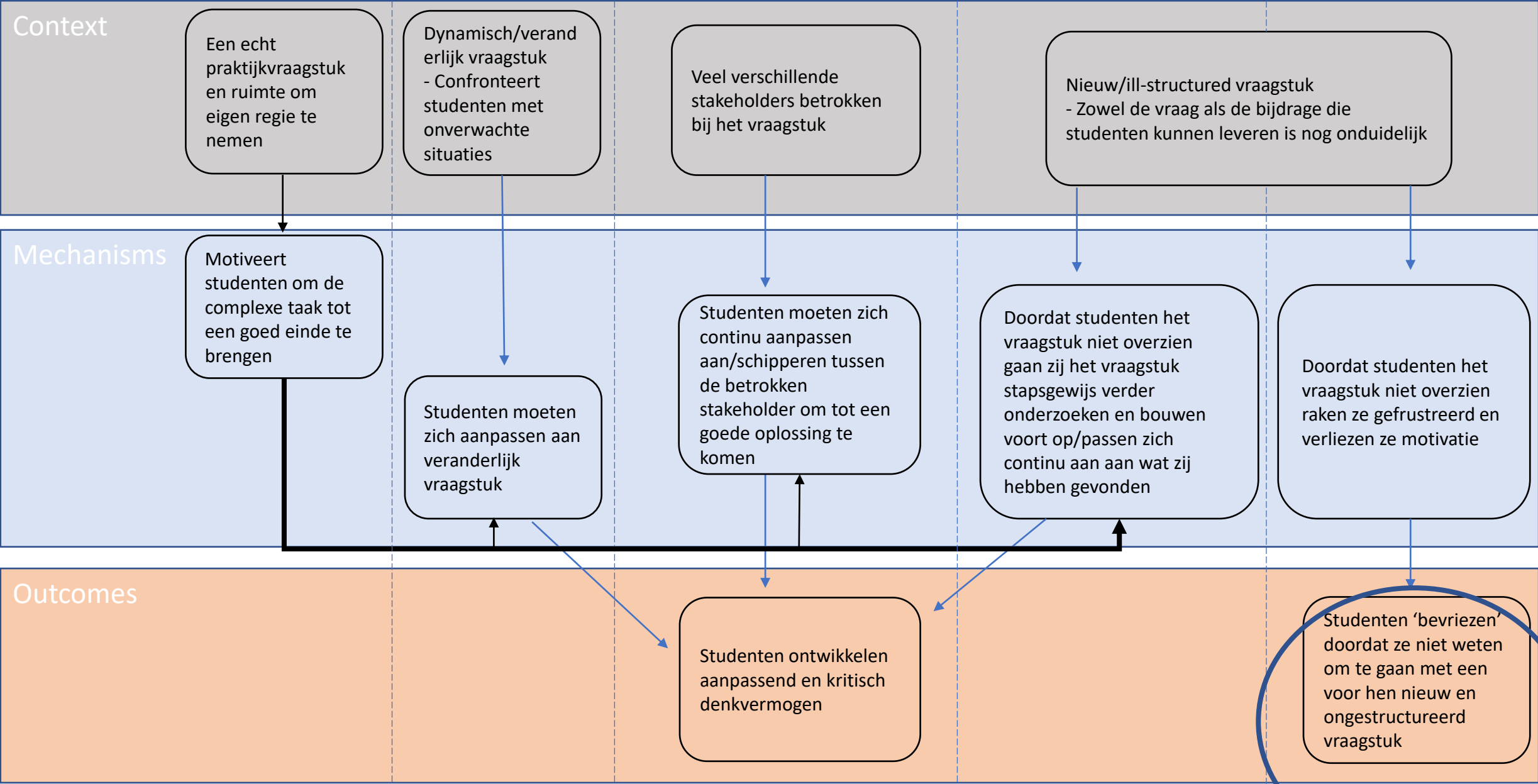
In this way, students gain new insights in what works and what not in different situations and build up new action repertoire.

Refute/refinement

Refine:

- Navigating complex situations and continue adjustment.
- Experimenting and reflection
- Authenticity and complexity versus degrees of freedom
- Relation with motivation

Gevonden overkoepelende CMO's met betrekking tot taakcomplexiteit



Gebaseerd op: HU-1a&b, Avans-1a&b, Saxion-3, Maastricht-6

Gebaseerd op: HU-1b, RUMC/HAN-3, Fontys-4

Gebaseerd op: Hanze-3, Avans-1c en HU-1

Gebaseerd op: Fontys-4, HU-1a, Saxion-3 en Maastricht-3

Gebaseerd op: HU en Saxion-3

Preliminary results: educators (college and work)

IPT

*The hypothesis is when students are **supported and challenged** by their supervisor, in a **safe environment** and from their **professional role, to deal with new situations in collaboration** with their supervisor / coworkers/ manager, they will be stimulated to work differently.*

*When the students are challenged by their supervisor **to examine own conceptual frames** from an open, responsive stance, they think and act differently.*

*When they **relate experiences gained to their own professional development**, this contributes to the development of a **critical, reflective attitude, metacognitive skills and lifelong learning skills**. This stimulates AE development.*

Refute/refinement

Refine:

- Guiding self-management
- Guiding self-reflection
- Guiding task efficacy
- Guiding the collaboration process

Refute:

- examine own conceptual frames?

Begeleiden reflective practitioner & AE (compact)

Context

Opleiders geven ruimte voor ontwikkeling leren

Opleiders begeleiden gericht op reflectie

Opleiders nemen balans tussen laten experimenteren en ondersteunen

Mechanisms

Studenten reflecteren kritisch op handelen irt persoons/professionele ontwikkeling

Studenten reflecteren op ervaringen tav beroepstaak

Kritische, reflectieve en actieve houding door studenten

Onstaat bij studenten bewustwording van eigen ontwikkeling, kennis en/of kwaliteiten

Studenten gaan uitdagingen eerder aan, toenemende motivatie

Zelf experimenteren, zelf oplossingen bedenken, alternatieven in kaart brengen

Studenten voeren actief regie op eigen ontwikkeling en/of handelen, studenten voelen ruimte voor agency

Outcomes

Studenten ontwikkelen reflectief vermogen irt professionele identiteit

Studenten ontwikkelen kritische reflectief vermogen/houding

Studenten ontwikkelen nieuwe kennis/ inzichten toepassen, probleemoplossend vermogen

Preliminary results: climate of the work-environment

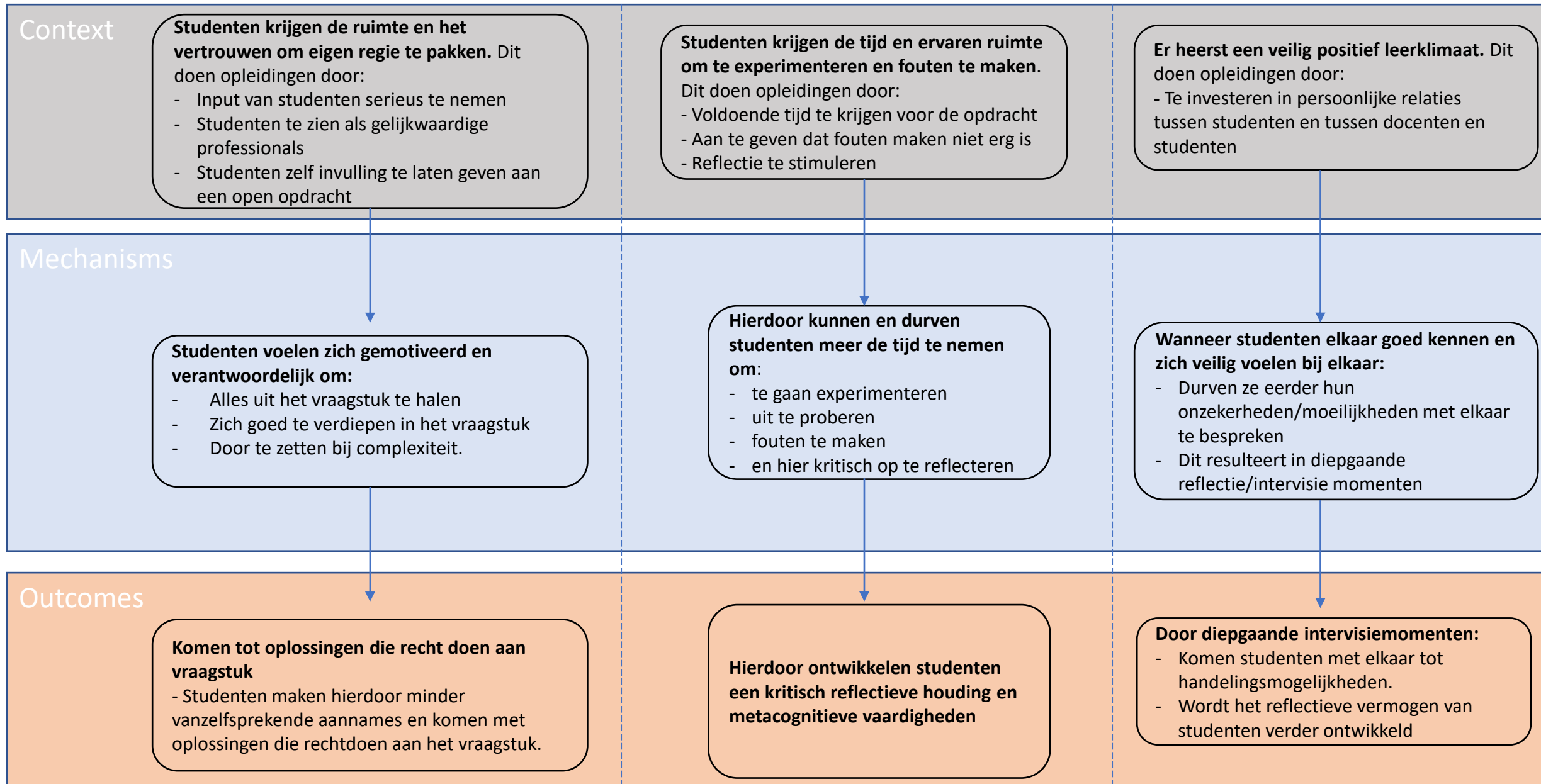


Refute/refinement

Refine:

- Space voor self-management
- Opportunities to experiment, make mistakes and reflect
- Safe and positive learn-work environment in which you can be vulnerable

Gevonden overkoepelende CMO's met betrekking tot leerwerkklimaat



Preliminary results: interaction with others (1)

IPT

*The expectation is that **through interaction and critical dialogue** with others, students **reconsider own ideas and assumptions and integrate ideas of themselves and others** to find an approach to deal with the problem (shifts).*

*This leads to **enriched conceptual ideas** in what works in certain situations and (re)definition of identity and work practices.*

Refute/refinement

Refine:

- Awareness other perspectives and expertise
- Dialogue on content
 - feedback, reflection, exchange, confronting and mirroring
 - use of expertise
- Seeing occupational alternatives , adapt behaviour and/ or way of working
- Development of critical reflective attitude and ownership of own learning process
 - seeing additional value of self related to others

Preliminary results: interaction with others (2)

IPT

*The expectation is that **through interaction and critical dialogue** with others, students **reconsider own ideas and assumptions and integrate ideas of themselves and others** to find an approach **to deal with the problem** (shifts).*

*This leads to **enriched conceptual ideas** in what works in certain situations and (re)definition of identity and work practices.*

Refute/refinement

Refute:

- Not always about problem solving
- Not always critical dialogue
- Not always about reconsidering assumptions
- Enriched ideas (not per sé conceptual)
- Not always about integrating ideas

Upcoming



- Further refinement of IPT (synthesis)
- Comparison with other theories
- Make use of measurement data
- Feedback from consortium partners
- Writing of articles and presentations (Earli SIG 14, 2024).

Thank you for your attention!



www.adaptatwork.nl (EN button)

- Thematic issue (in Dutch 😊) of O&O (education & research) in Dutch: CMO descriptions in 11 cases. Will be issued november 2023.
- Nieuwenhuis, L., Fluit, L. & Kuijer-Siebelink, W. (2022). Adaptivity between professional learning and education: the development of flexible expertise in work-based settings. In: Malloch, M., Cairns, L., Evans, K. & O'Connor, B.N. (eds.). *The SAGE handbook of Learning and Work*. SAGE Publications.
- Pelgrim, E., Hissink, E., Bus, L., Van der Schaaf, M., Nieuwenhuis, L., Van Tartwijk, J. & Kuijer-Siebelink, W. (2022). Professionals' adaptive expertise and adaptive performance in educational and workplace settings: an overview of reviews. In: *Advances in Health Sciences Education*, <https://doi.org/10.1007/s10459-022-10190-y>
- Groenier, M., Khaled, A., Kamphorst, J., Tankink, T., Endedijk, M., Fluit, C., Kuijer-Siebelink, W. (under submission). Adaptive expertise development during work-based learning in higher education: A realist review.

