

# Kunstmatige intelligentie in het onderwijs

Dr. Inge Molenaar

Kunstmatige intelligentie en kansenongelijkheid in het onderwijs

Behavioural  
Science  
Institute



Adaptive Learning Lab  
- ALL -

Radboud University

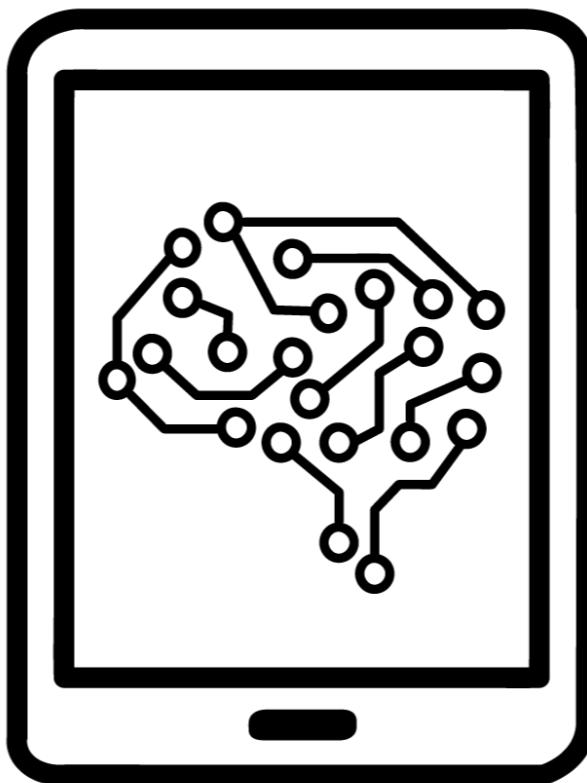
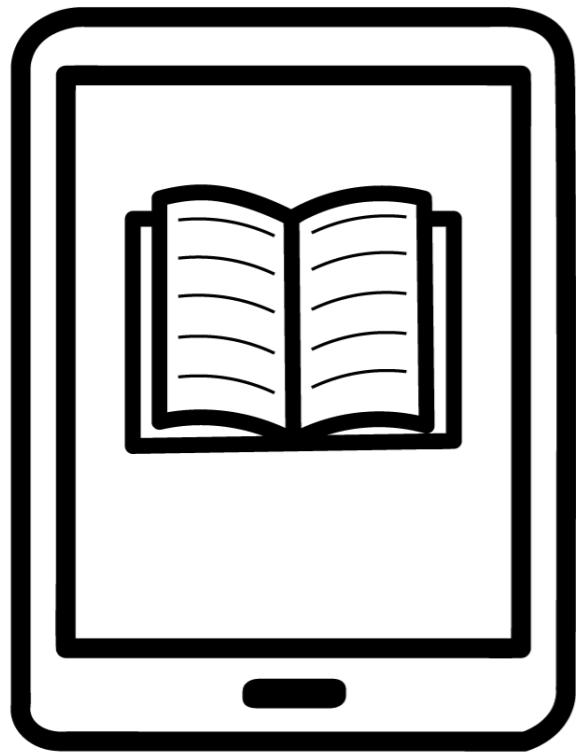


# Inhoud

- Digitale en Adaptieve leermiddelen
- De rol van AI in het onderwijs
- Het Tesla-model “de 6 niveaus van automatisering”
- Positioneren van leermiddelen op het model
- Implicaties voor gelijke kansen



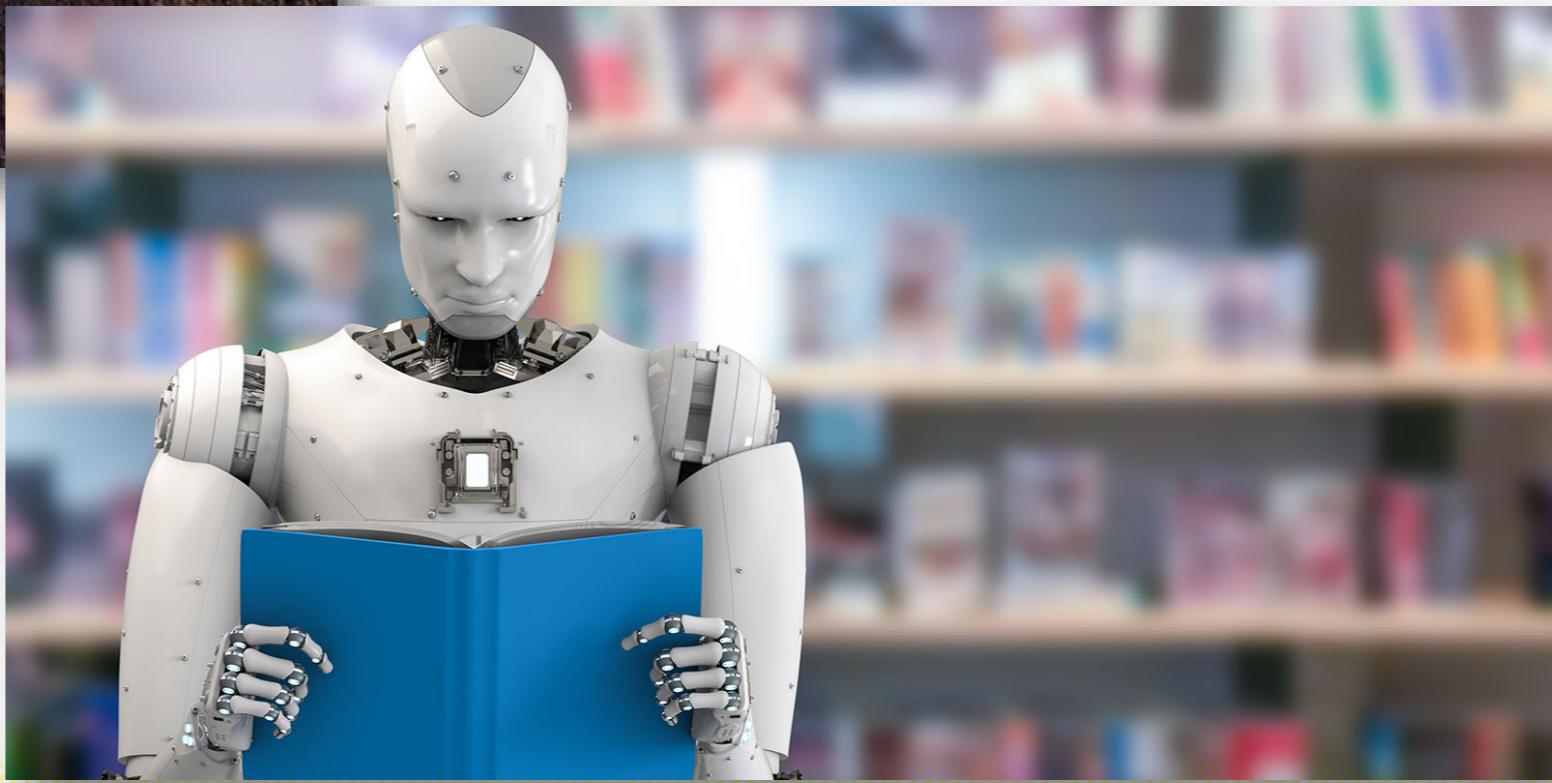
# Digitale versus Adaptieve Leermiddelen





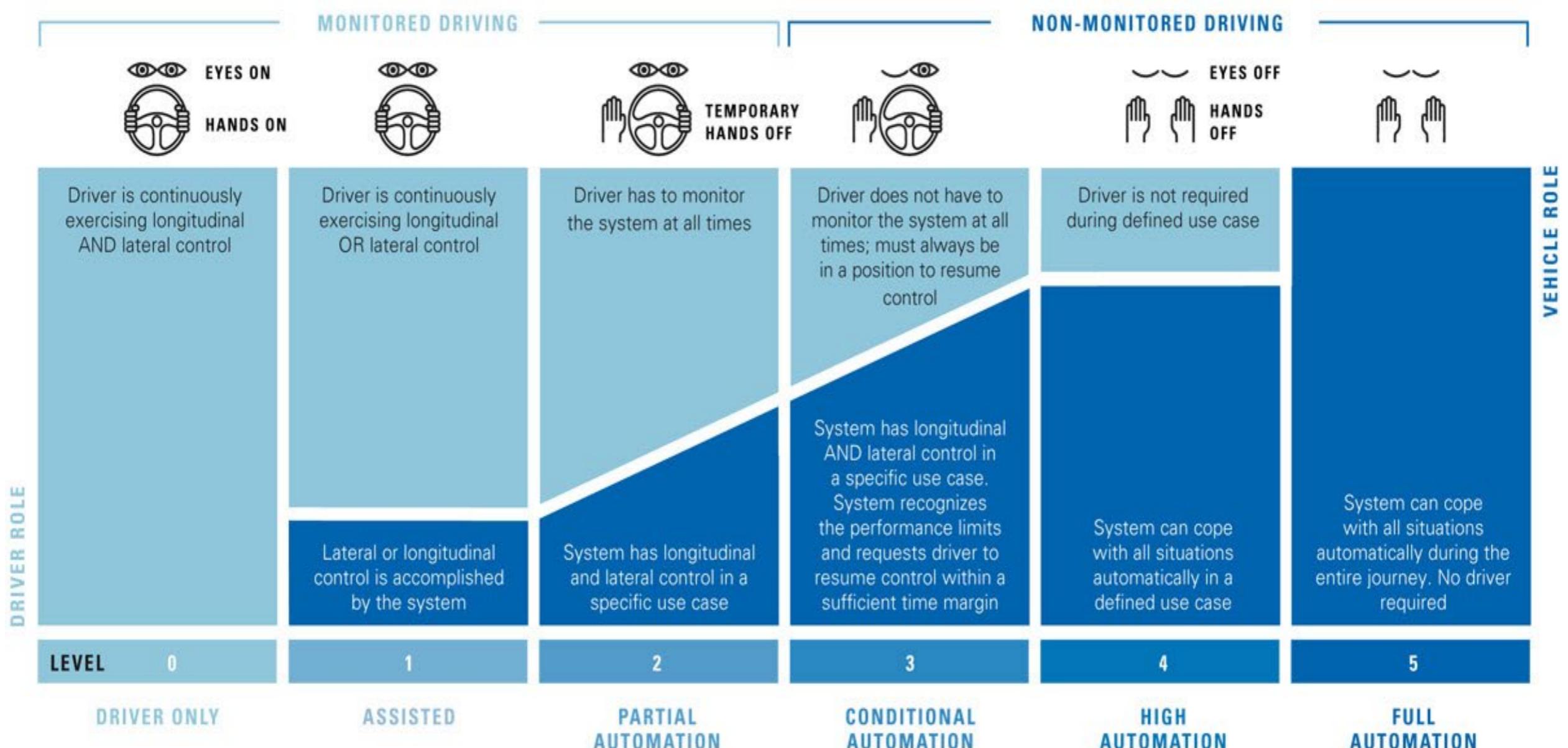




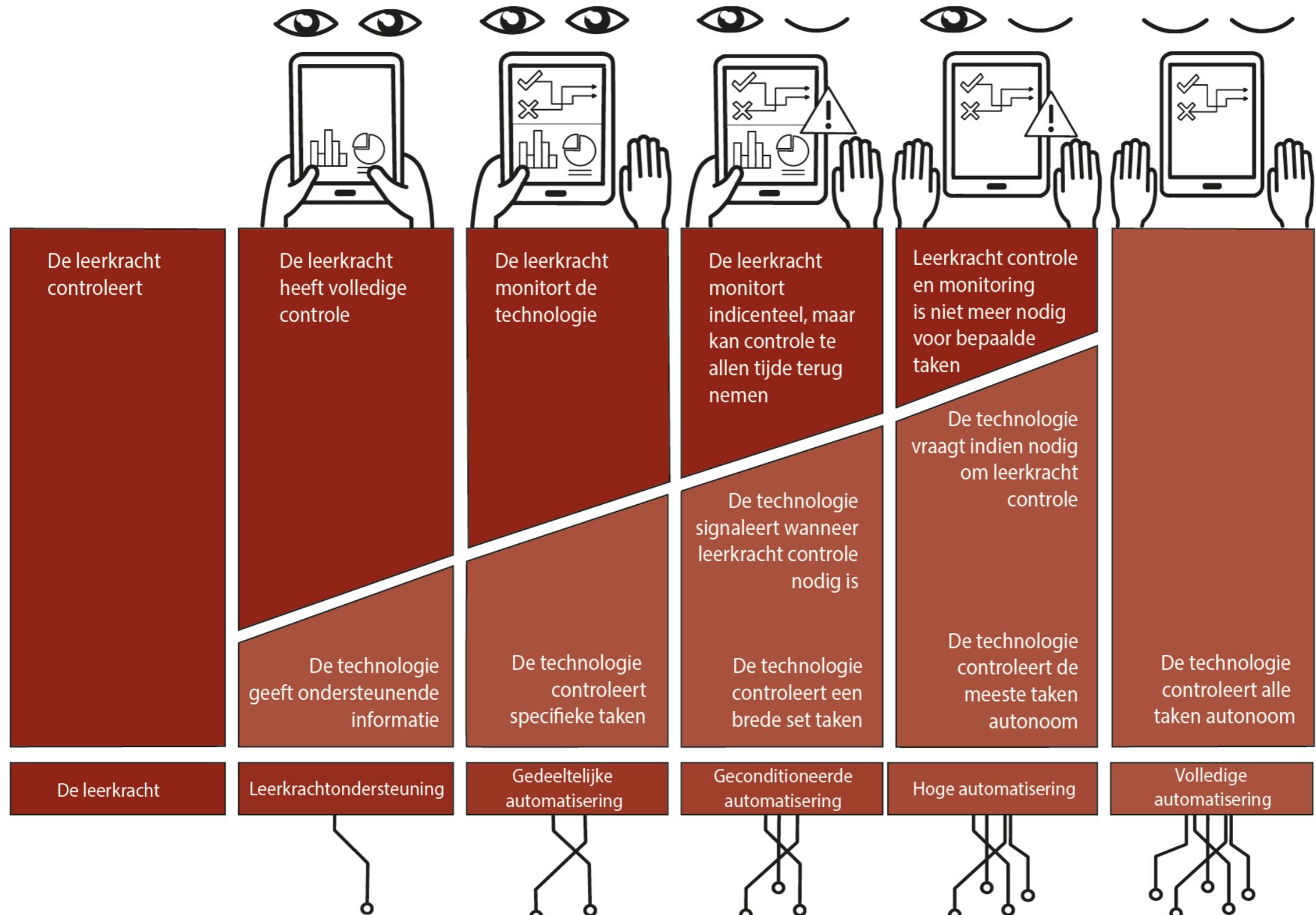


# Hybrid Intelligence Paradigm



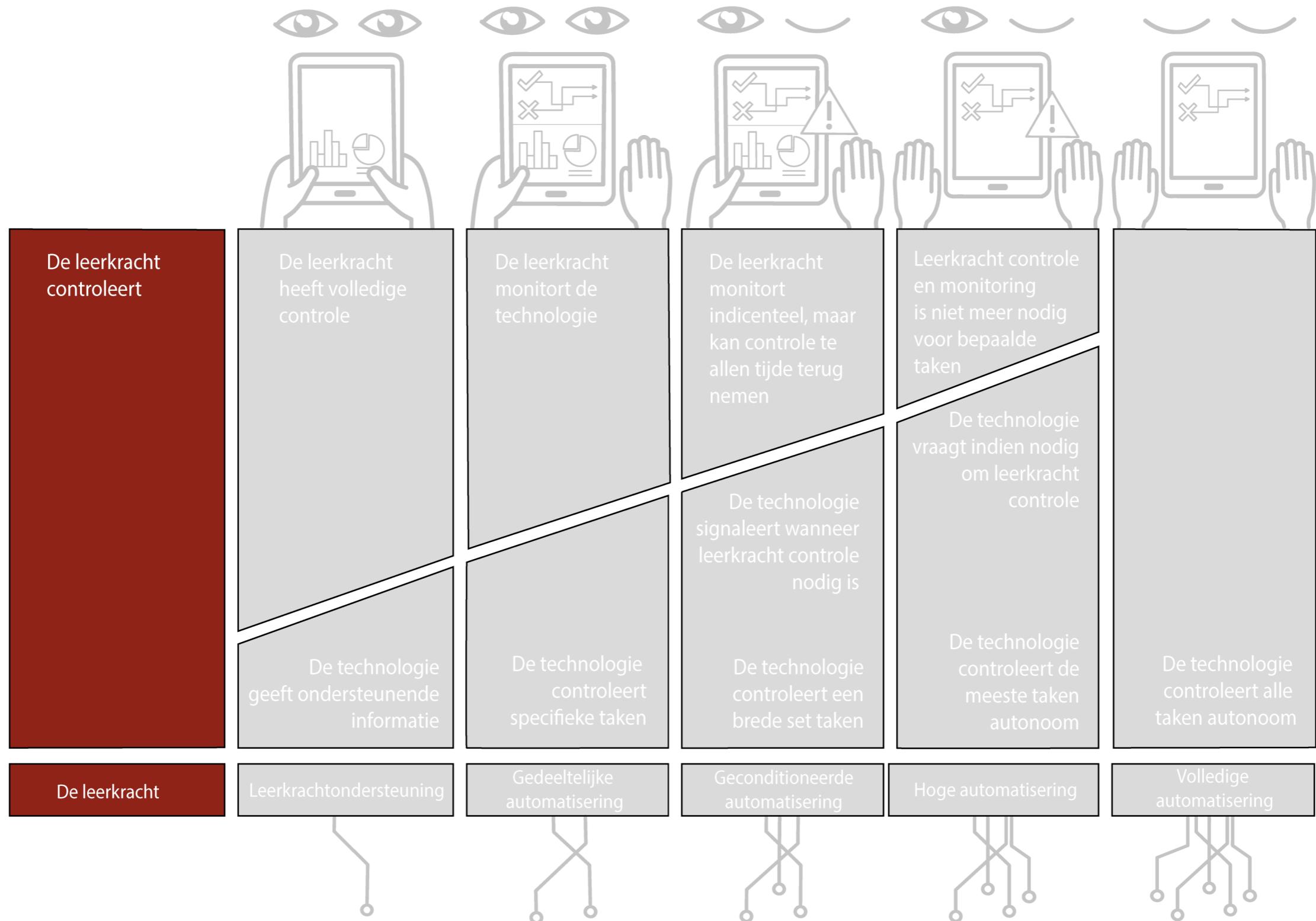


Mike Lemanski

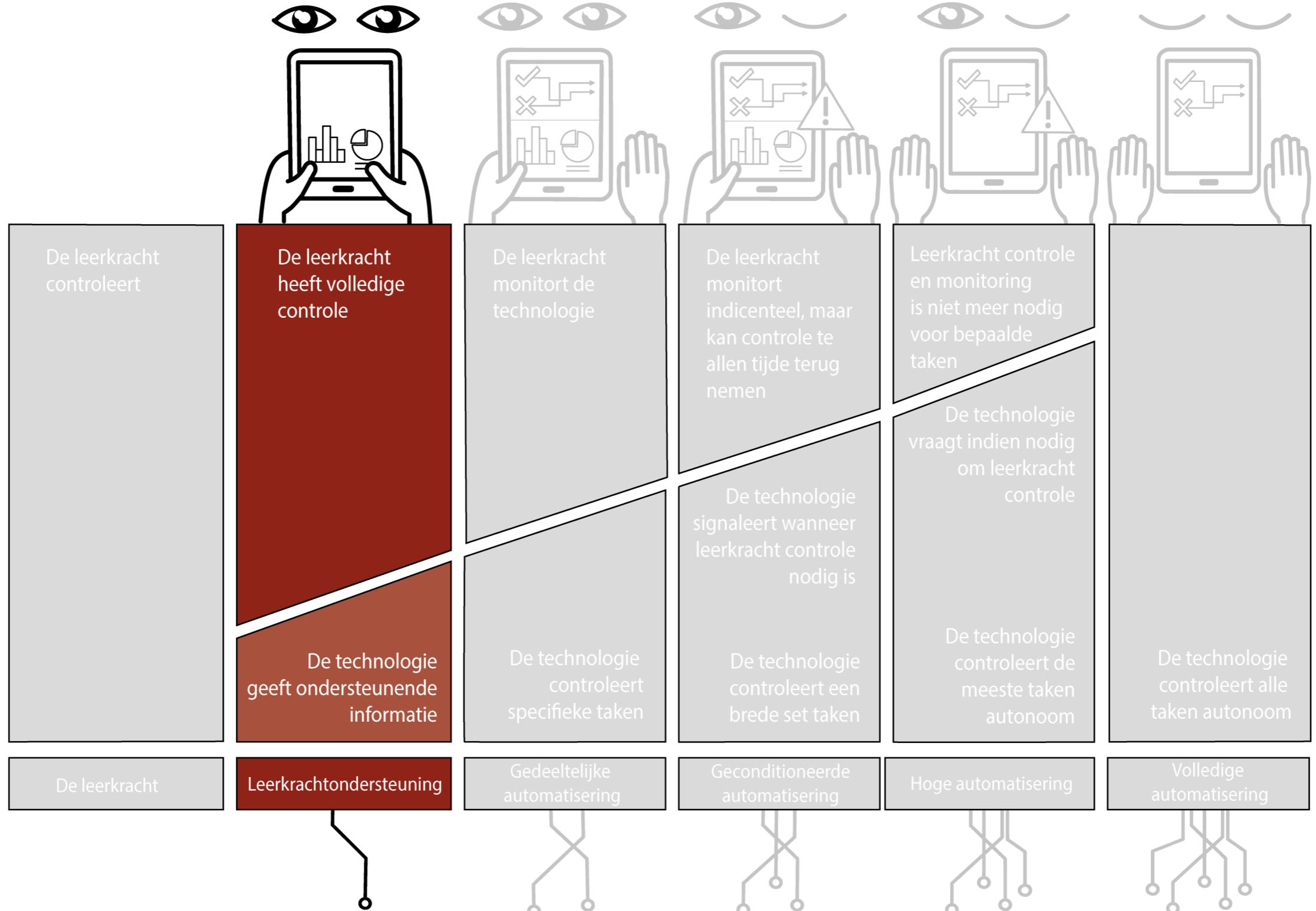


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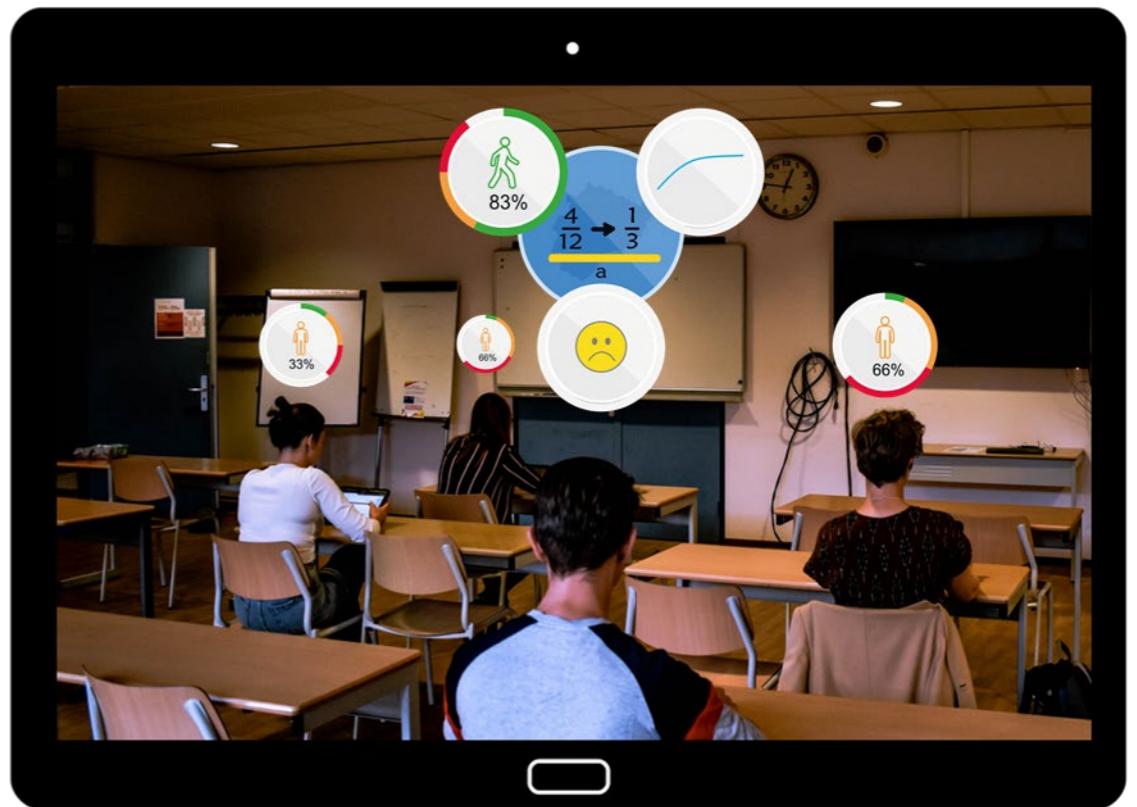
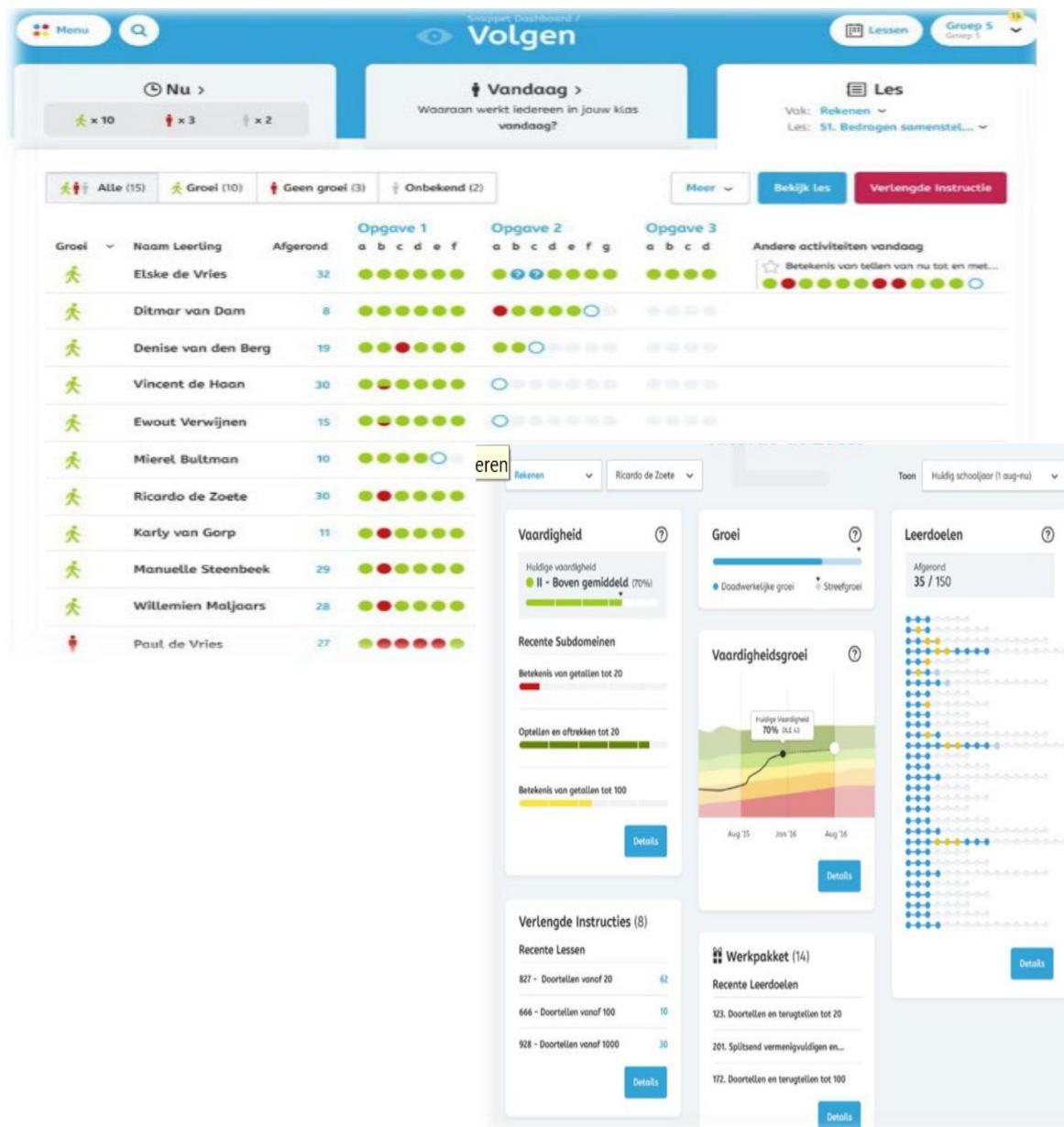


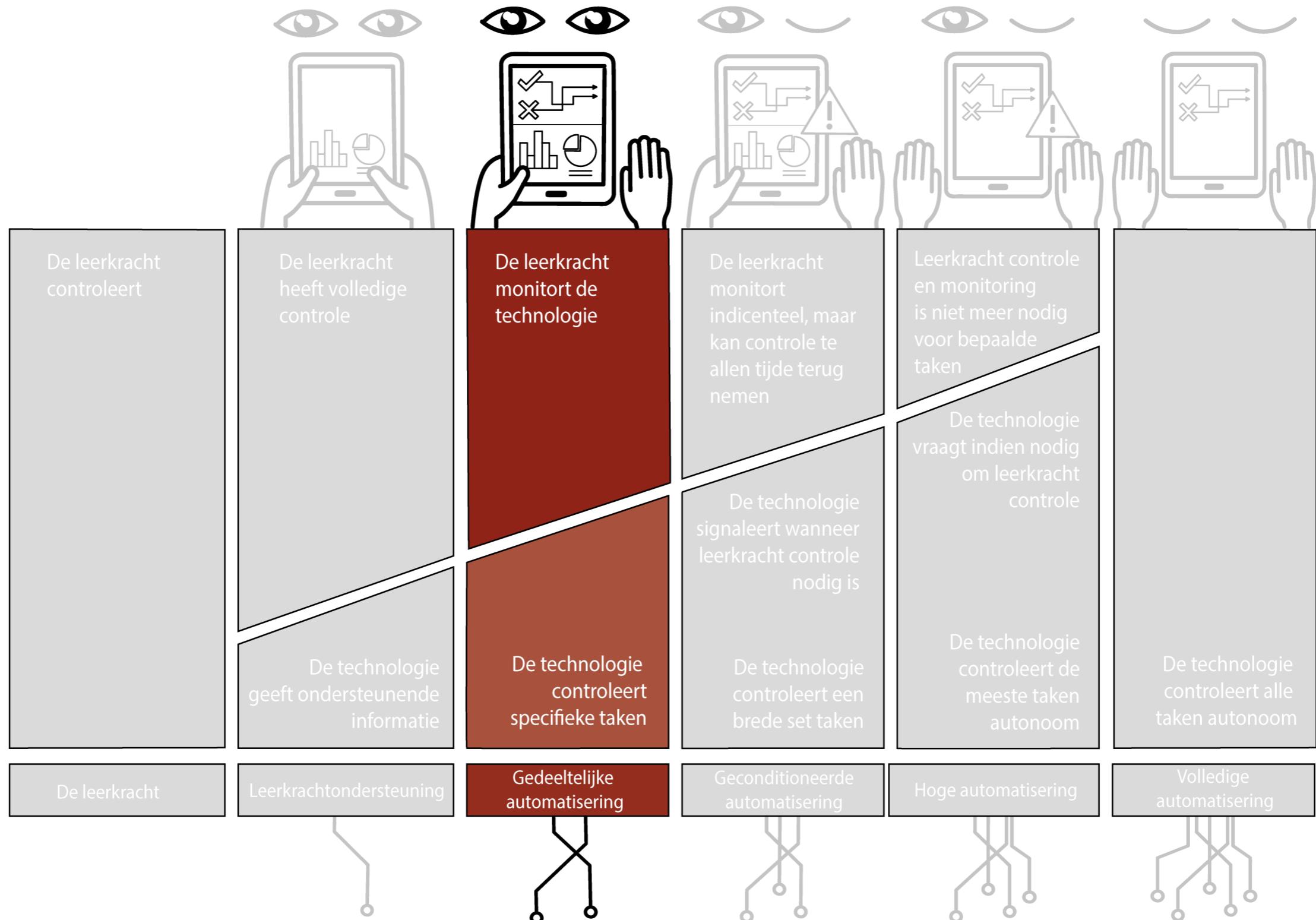
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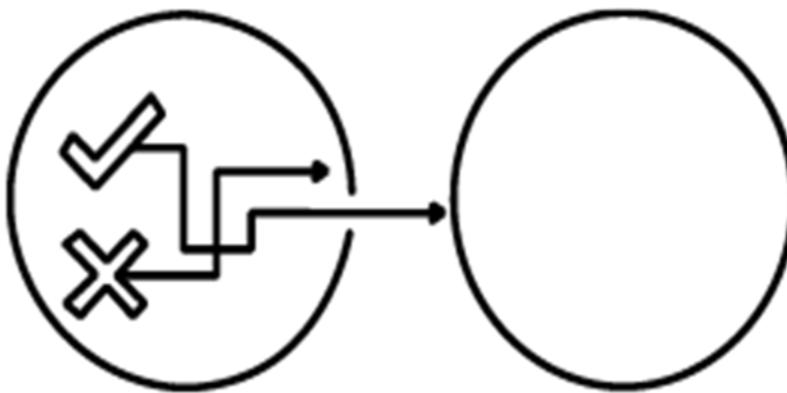
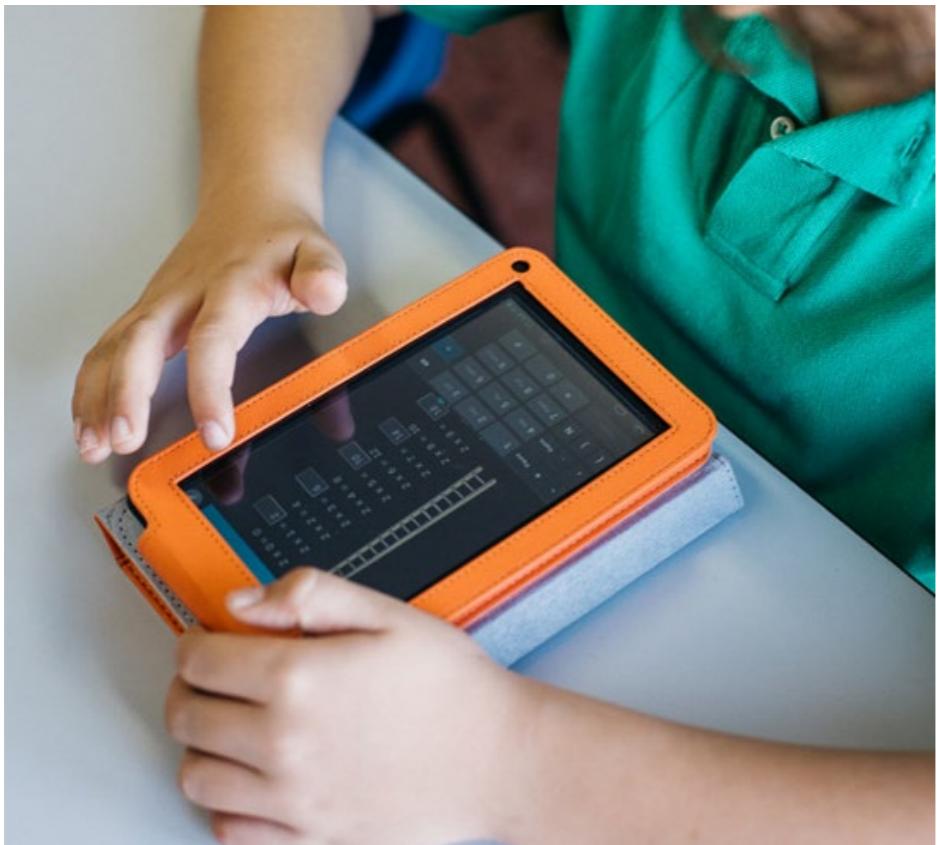
# Leerkracht ondersteuning: Dashboards



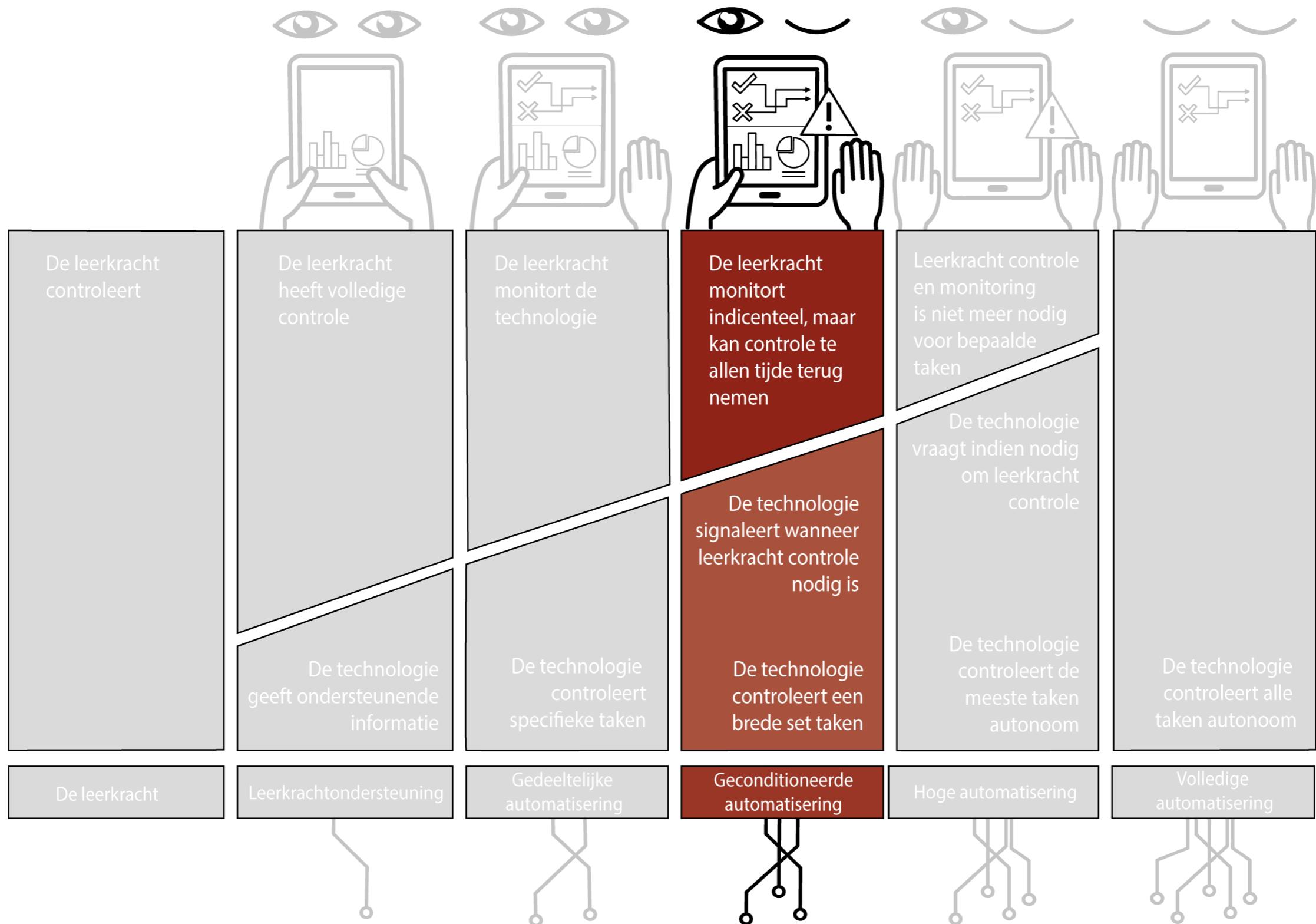


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# Gedeeltelijke automatisering

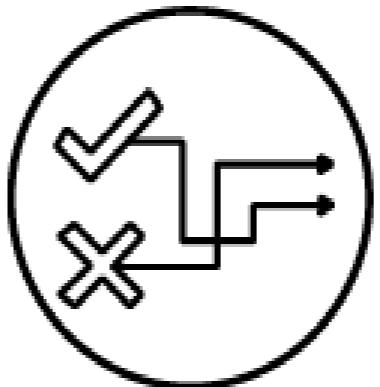
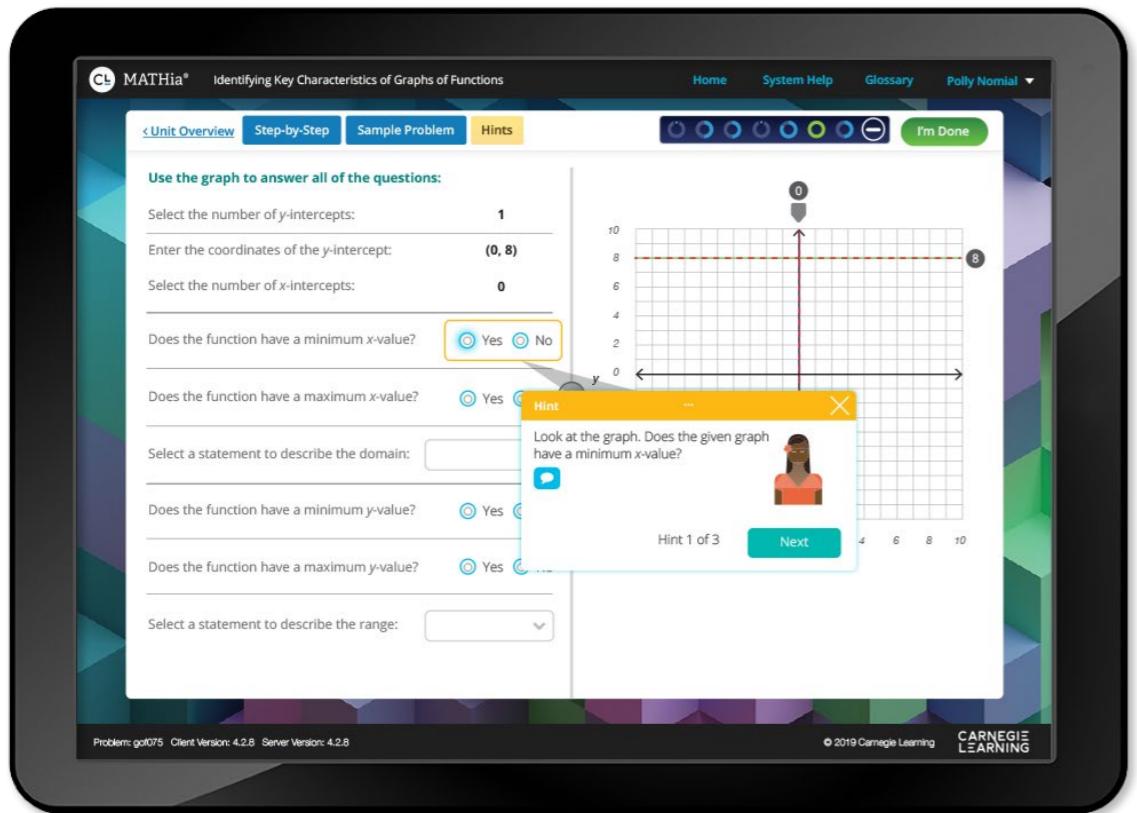


Taak adaptiviteit

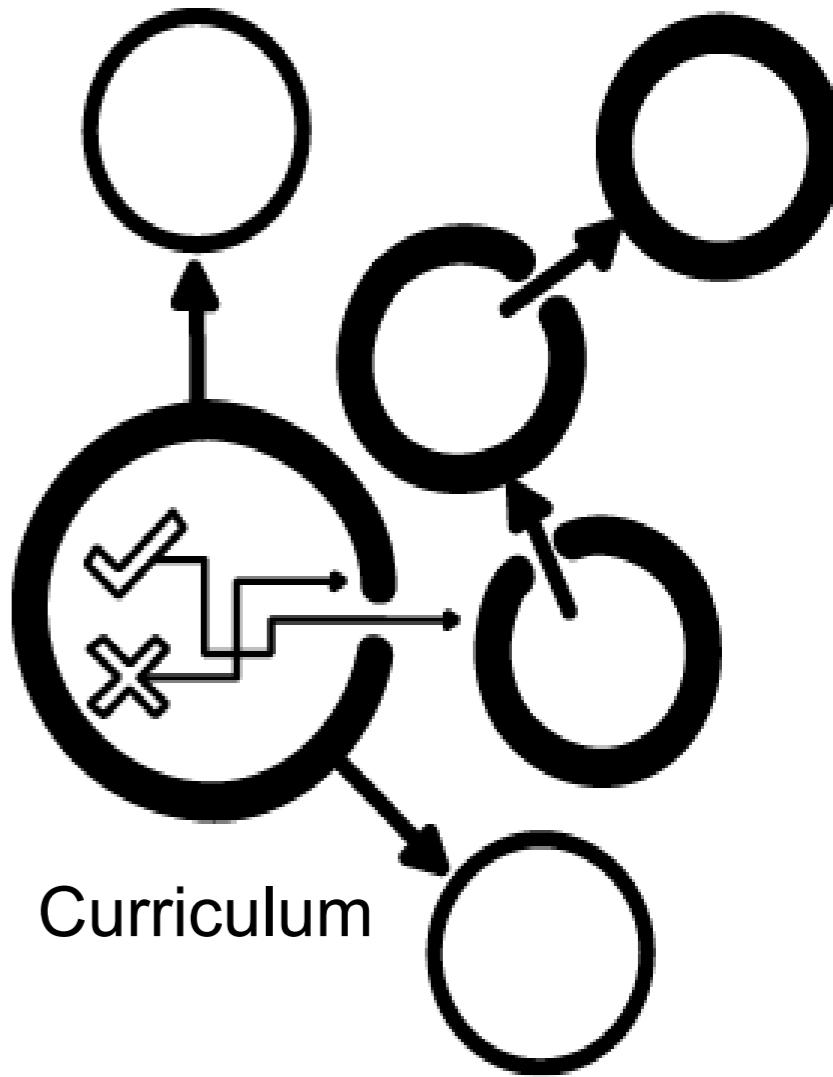


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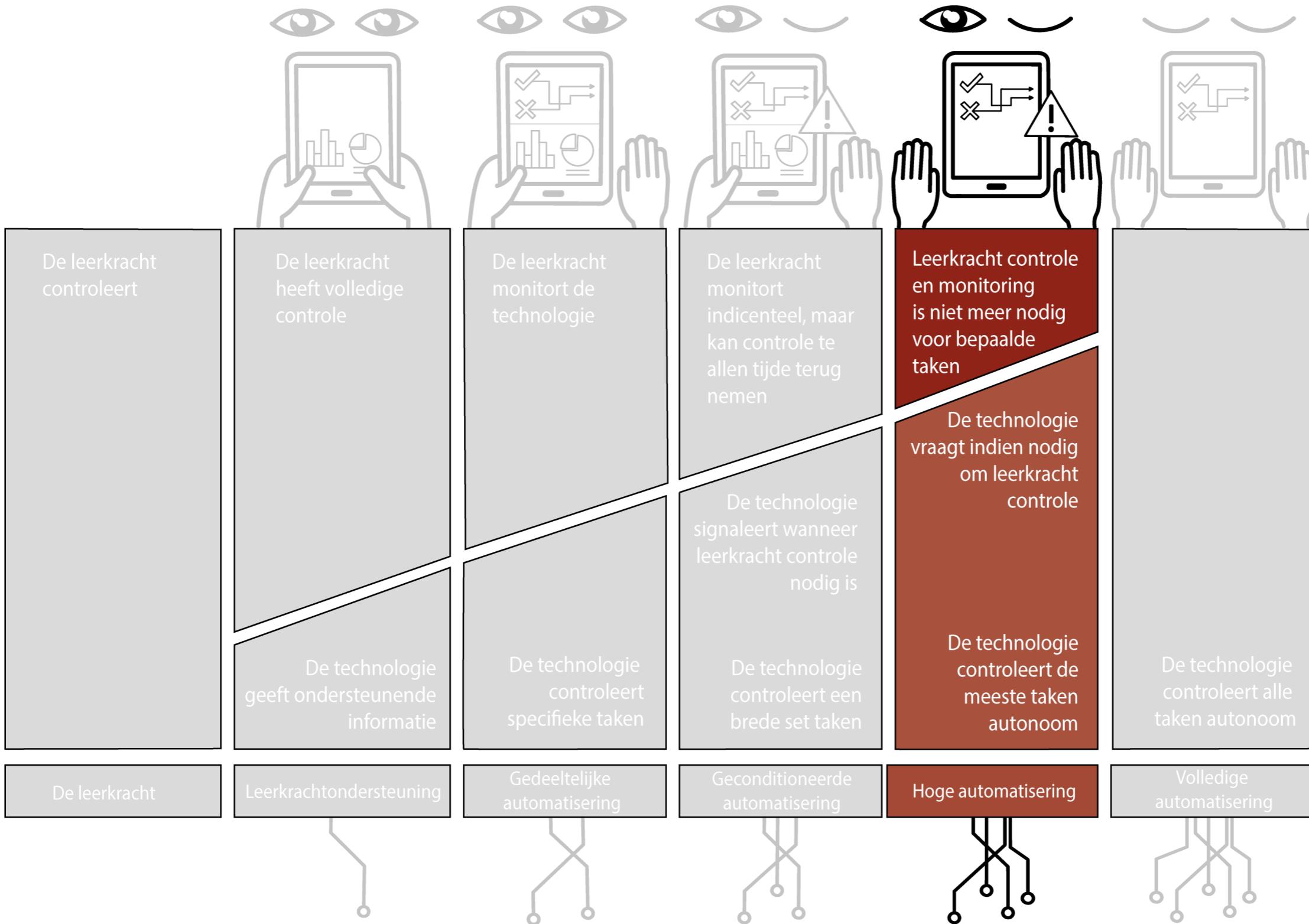
# Conditionele Automatisering



Stap

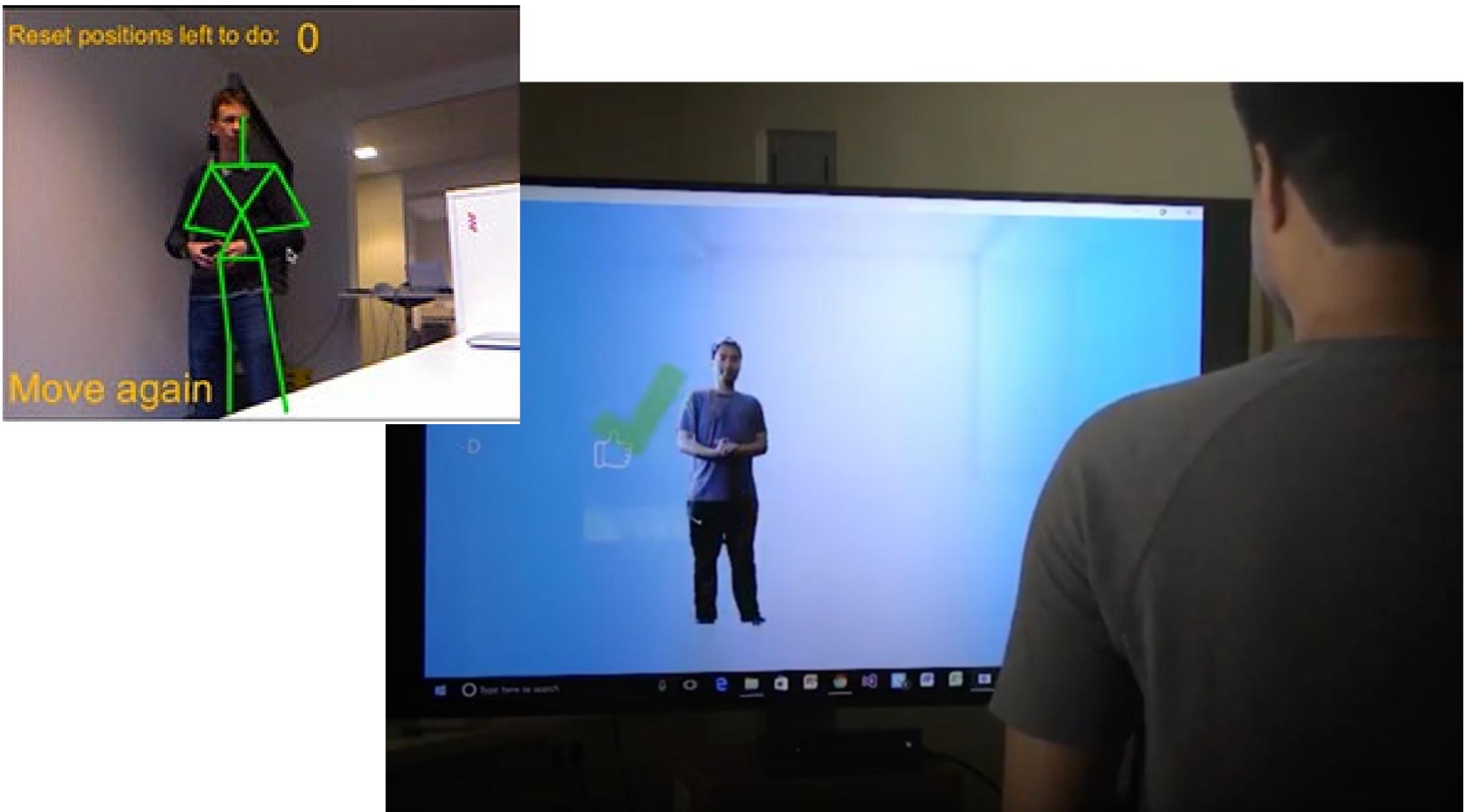


Curriculum



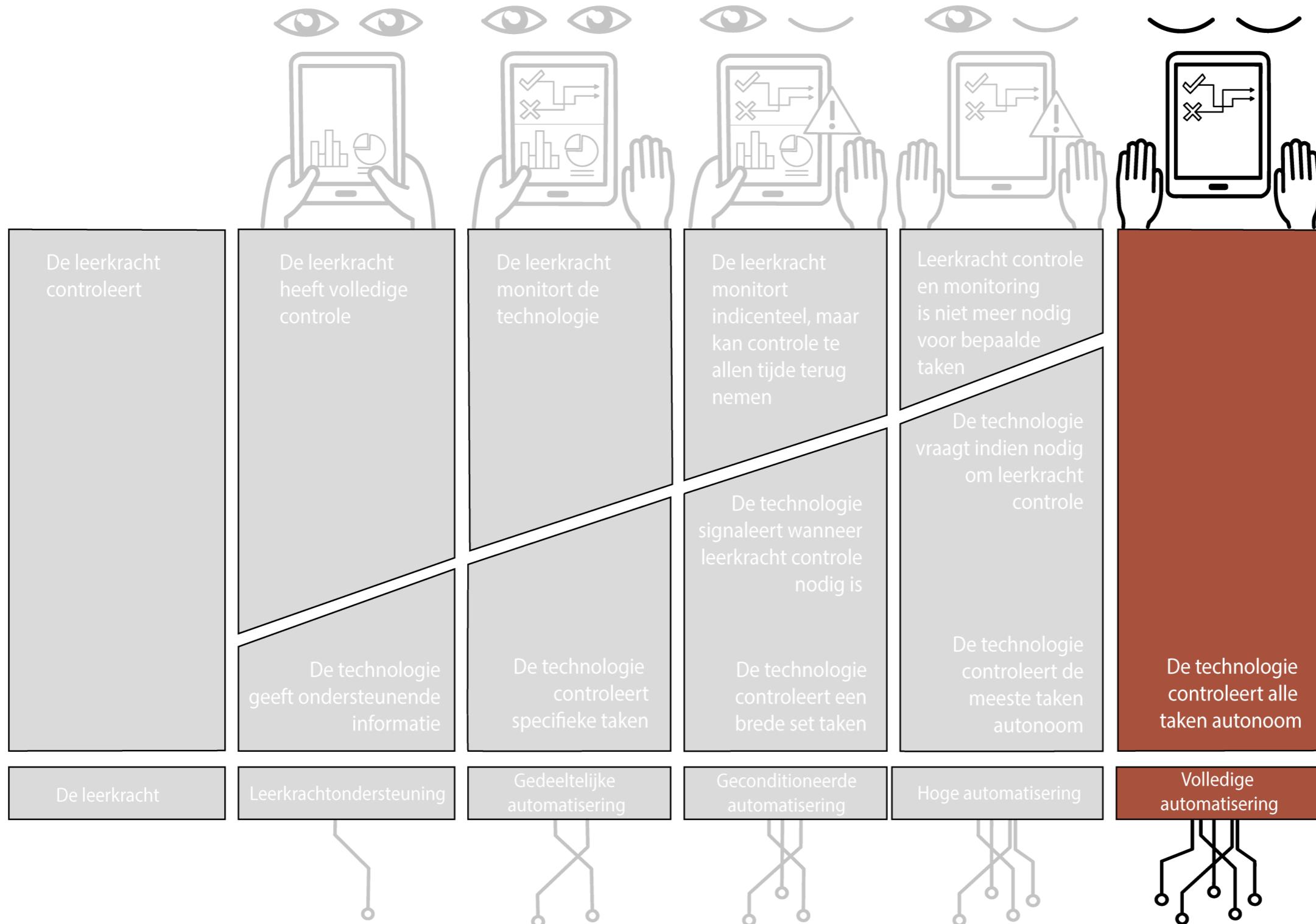
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# Hoge Automatisering

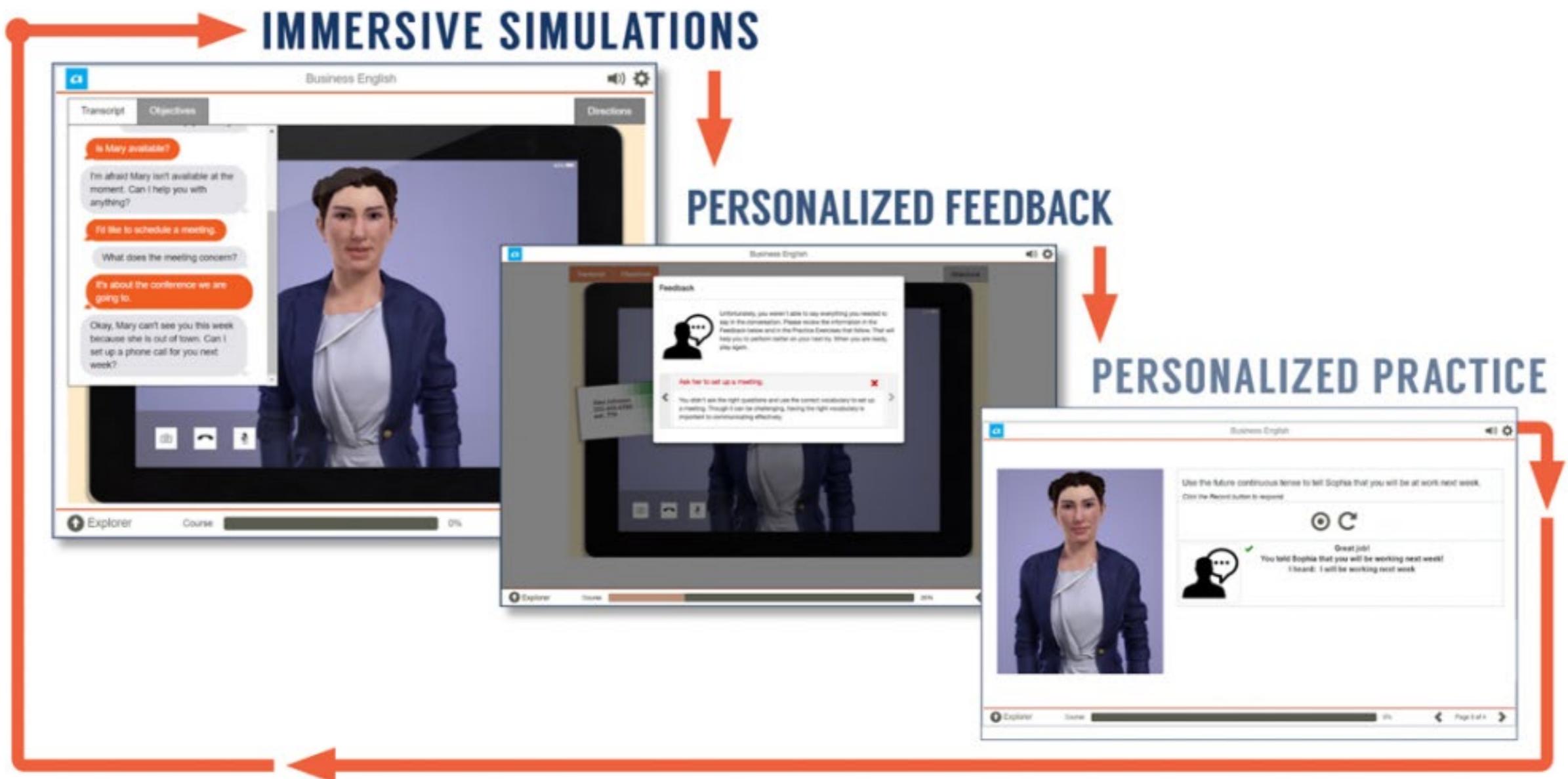


[www.ou.nl/presentation-trainer](http://www.ou.nl/presentation-trainer)



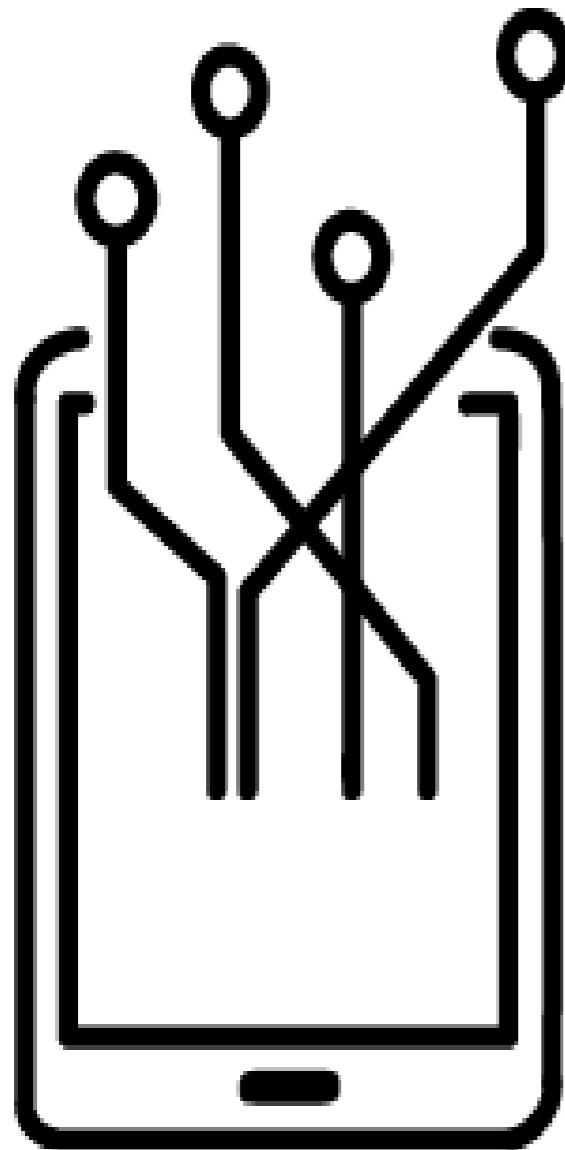


# Volledige automatisering

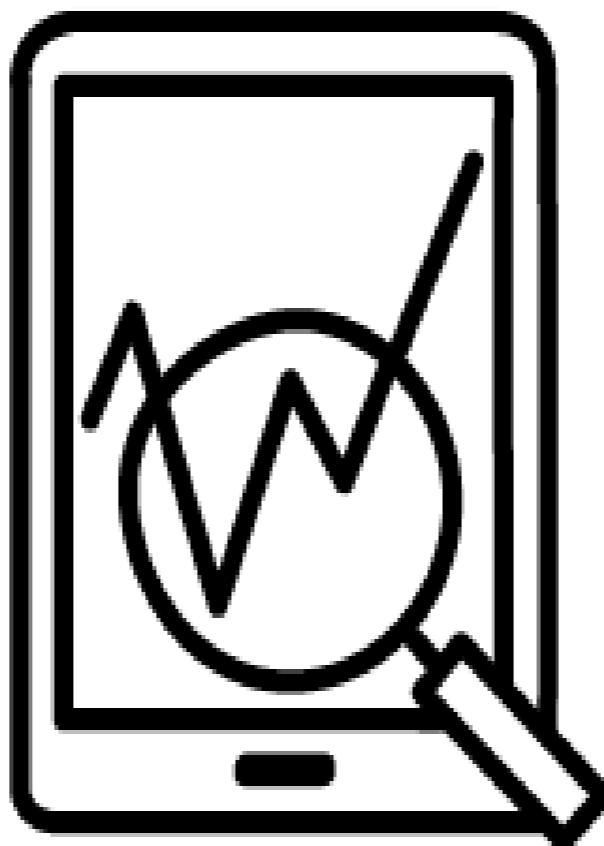


[www.Alelo.org](http://www.Alelo.org)

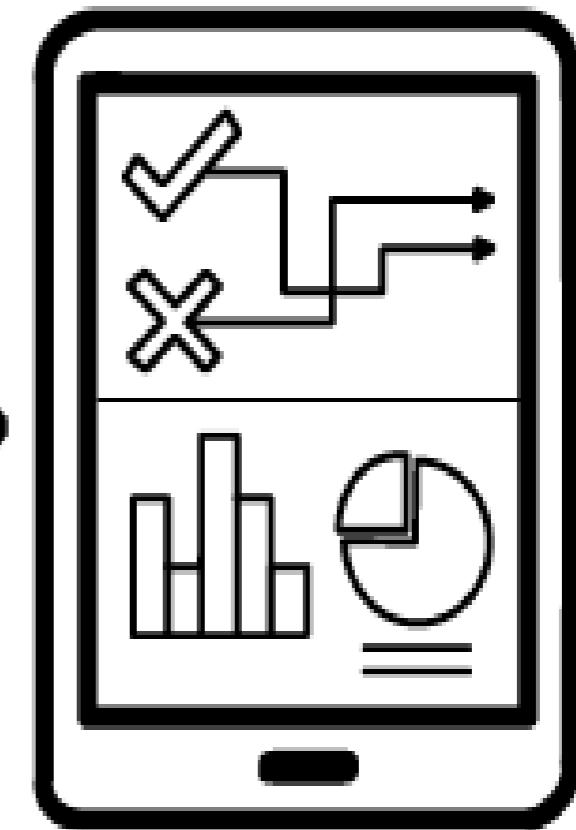




**Detecteren**



**Diagnosticeren**



**Acteren**

# Detecteren



logs



toetsenbord & muis



physiologische  
data



eye tracking



video



geluid



# Diagnostiseren

## Algemene Algorithme

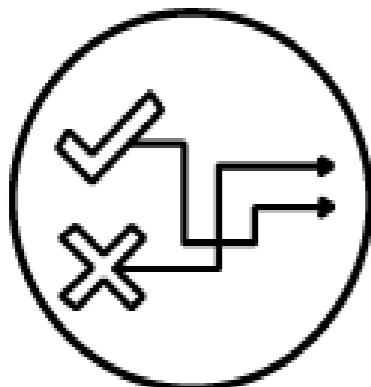
- ELO
- BKT
- Knowledge Graph

## Specifieke Algorithme

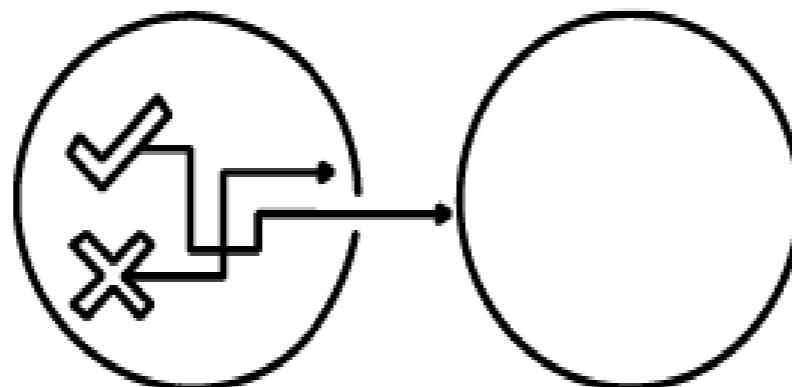
- Lezen (Lexplore)
- Dyslexie (Change Dyslexia)
- Dysgraphie (Asselborn et. 2019)
- Automatische feedback op essays (Letrus)



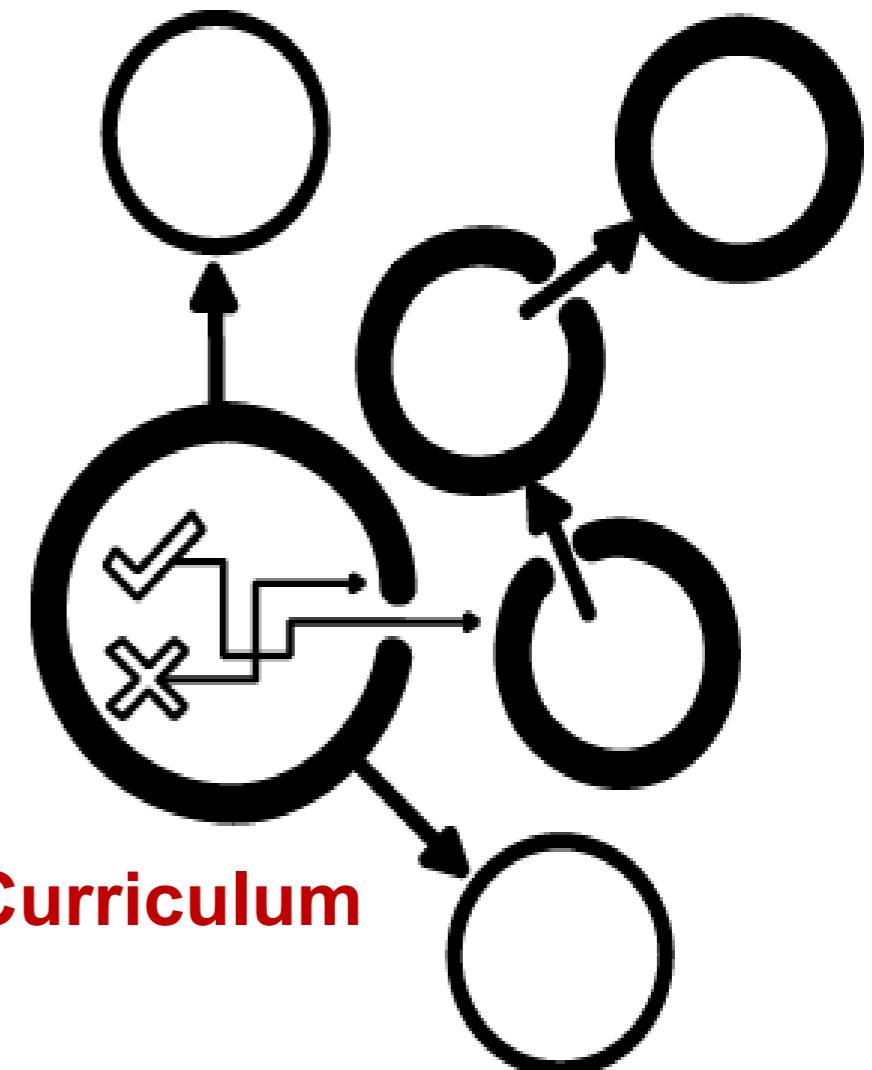
# Handelen: Vormen van Adaptiviteit



**Stap**



**Taak**



**Curriculum**

# Beperkt beeld



# Equality and Equitable



# Transparantie



# Hybride Mens-AI systemen



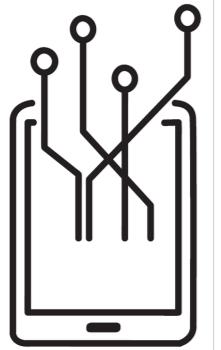
# Thema gelijke kansen

- Kansen om het onderwijsaanbod meer te laten aansluiten op behoeften van leerlingen
- Risico op divergente werking
- Belangrijke aandachtspunten:
  - Bewuste ontwikkeling van adaptieve leermiddelen: design keuzes
  - Bewuste inzet van adaptieve leermiddelen: didactische en pedagogische keuzes
  - Onderzoek naar de effecten van “onderwijs scenario’s” op gelijke kansen
  - Bijsturen waar nodig in het ontwerp van de techniek en de didactische implementatie



# Dr. Inge Molenaar

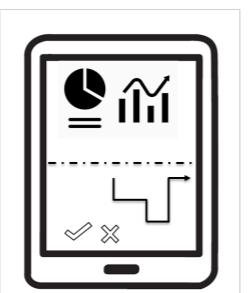
## Adaptive Learning Lab



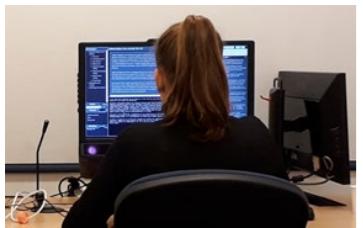
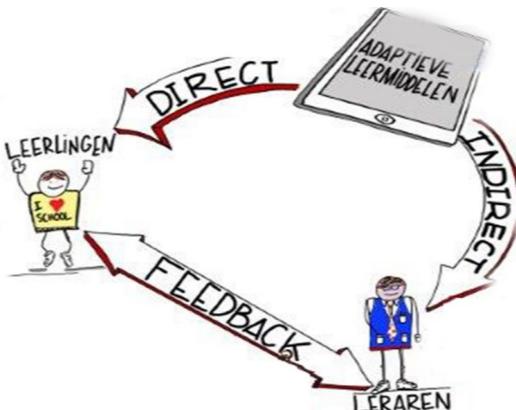
Detect



Diagnose



Act



FLORA

moodle



Leerpaden  
app

Gynzy



BEIJING CONSENSUS  
on artificial intelligence and education

snappet  
Connected Learning

stichting  
Klasse

Lucas  
Onderwijs

ThiemeMeulenhoff

z w i j s e n  
Breng leren tot leven



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Science  
Institute



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# Dank voor uw aandacht!

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