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Adaptive expertise

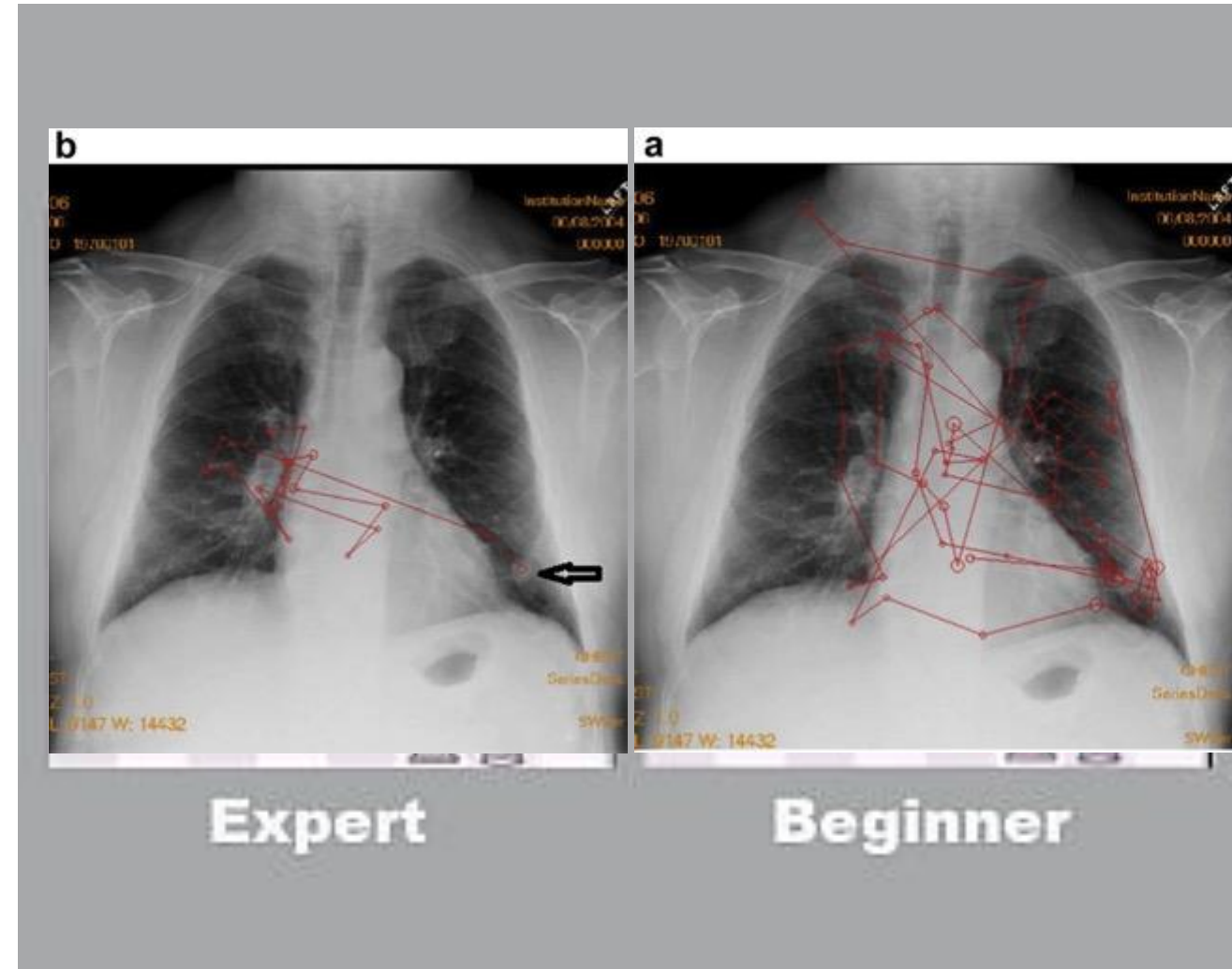
“The ability to perform at a relatively high level in unfamiliar situations thanks to understanding why a specific procedural skill should be used in a specific situation” (Bohle Carbonell et al.)

Expertise (De Groot, 1946)



Efficiënt gebruik geheugen.

Verklaring: betekenisvolle configuraties kunnen 'herkennen'



Development of image interpretation skills Dutch residents radiology

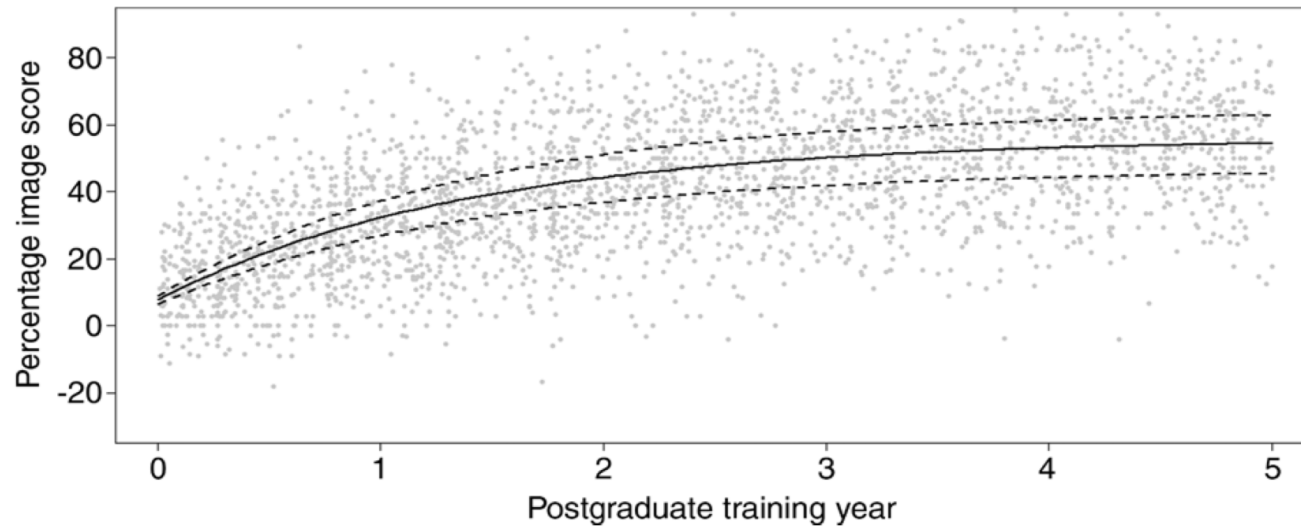


Figure 4: Predicted curves of development of scores on image questions for residents in training hospitals with average (continuous line), lowest (dotted line), and highest (dotted line) scores, and otherwise average characteristics.

- Longitudinal test data of 577 radiology residents; 2884 test results (5 years)
- Curvilinear growth during residency. Image scores increased faster during the first 3 years of residency



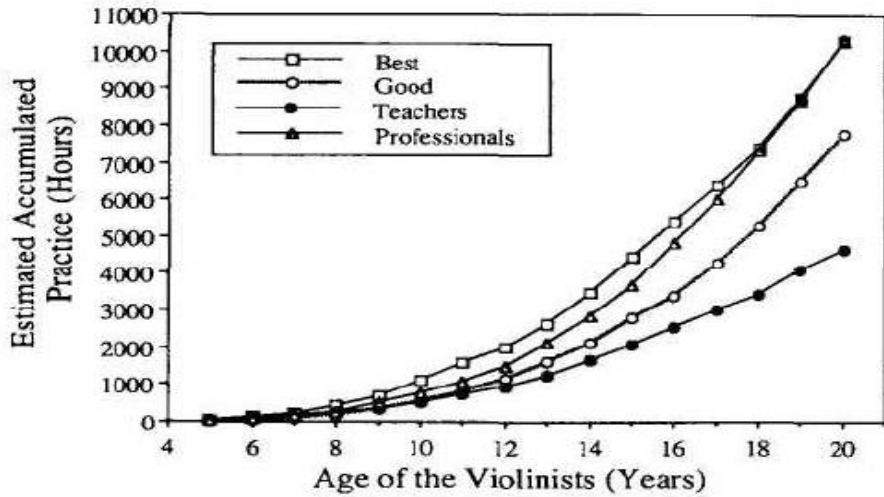
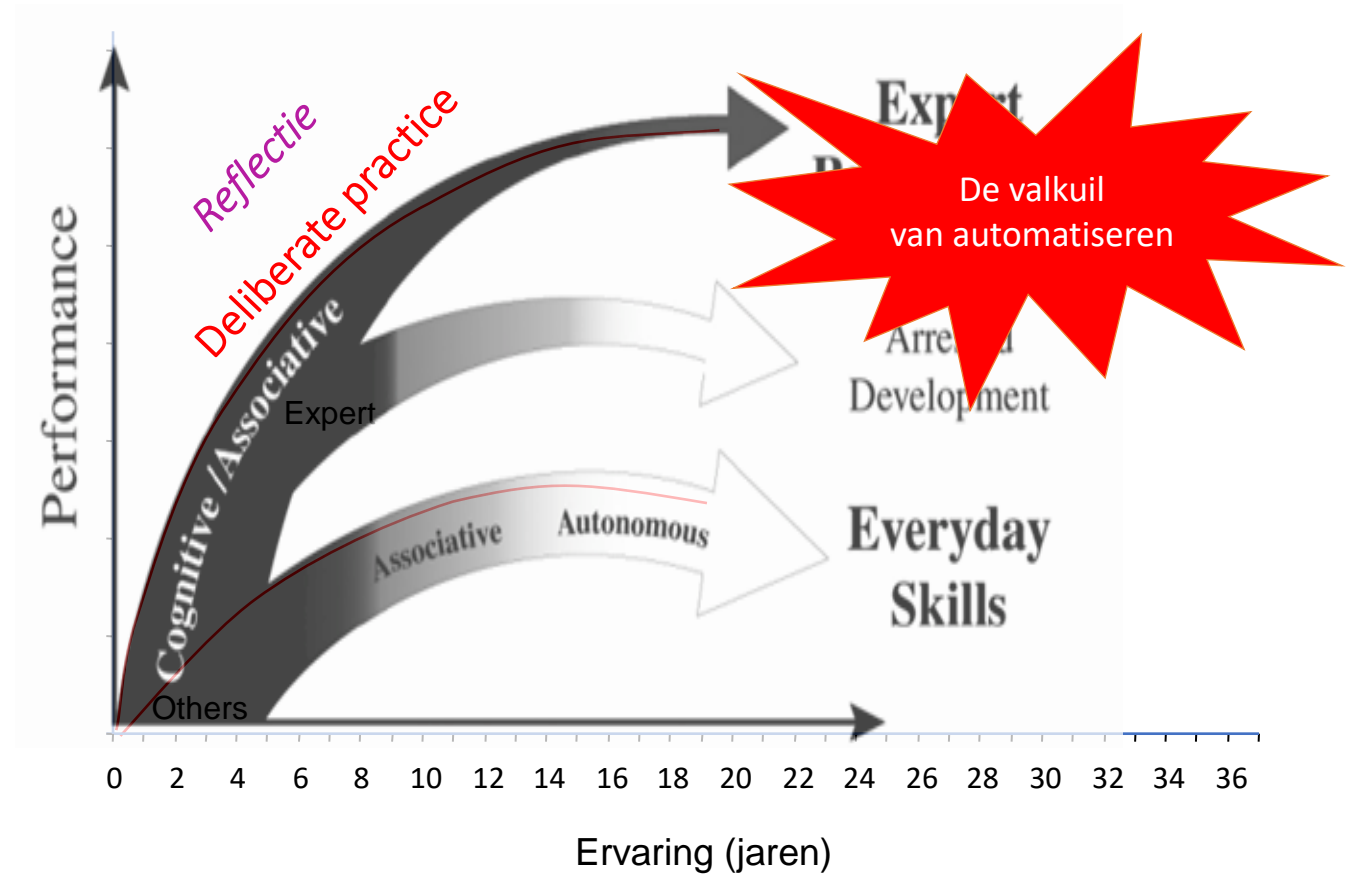


Figure 9. Accumulated amount of practice alone (on the basis of estimates of weekly practice) as a function of age for the middle-aged violinists (△), the best violinists (□), the good violinists (○), and the music teachers (●).



Jan van Tartwijk
 Bronkhorst, Meijer, Koster & Vermunt, 2014
 Choudry, Fletcher, Soumerai, 2005
 Ericsson, 1998, 2006
 Korthagen, Kessels, Koster, Lagerwerf & Wubbels, 2001



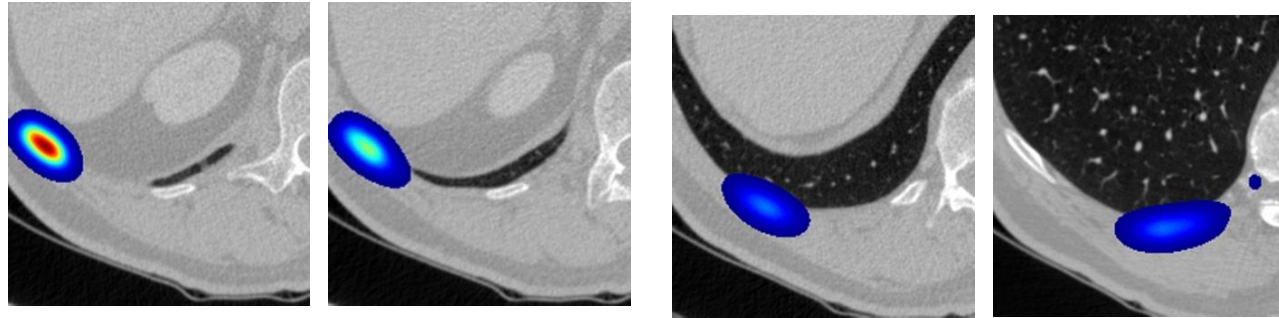


Deliberate practice

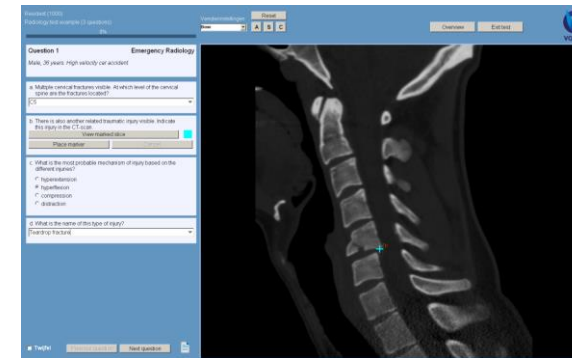
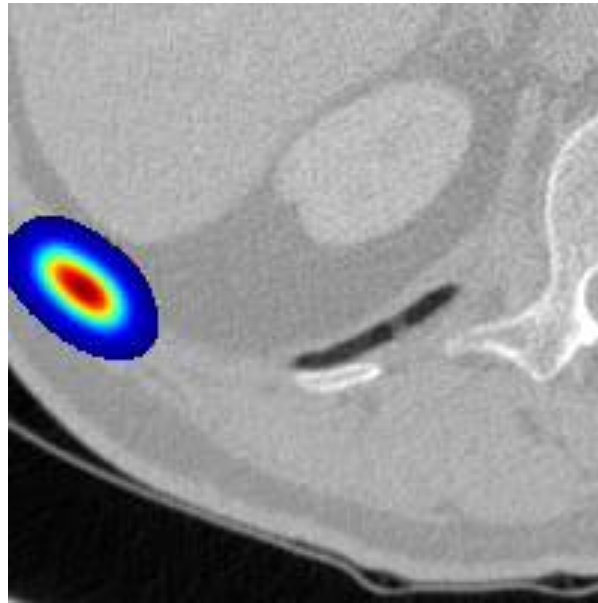
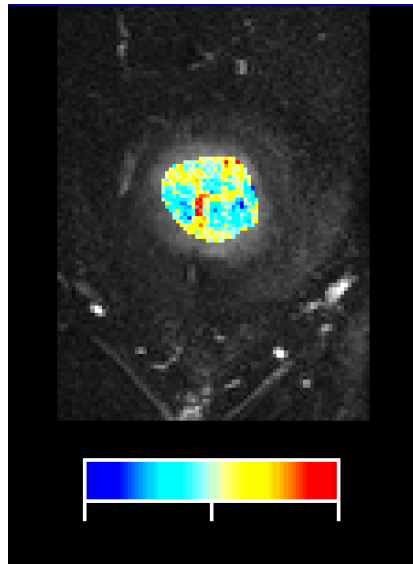
- Specifieke grensverleggende doelen stellen
- Focus gedurende het oefenen (geen afleiding)
- Onmiddellijke feedback en reflectie
- Trainer/coach/mentor begeleidt het proces

Feedback by means of hotspots/heatmap analysis

(ImageMe project; Rutgers et al. 2021)



Rutgers, D. R., van der Gijp, A., Vincken, K. L., Mol, C. P., van der Schaaf, M. F., & Ten Cate, T. J. (2021). Heat map analysis in radiological image interpretation: an exploration of its usefulness for feedback about image interpretation skills in learners. *Academic radiology*, 28(3), 414-423.



Typen expertise

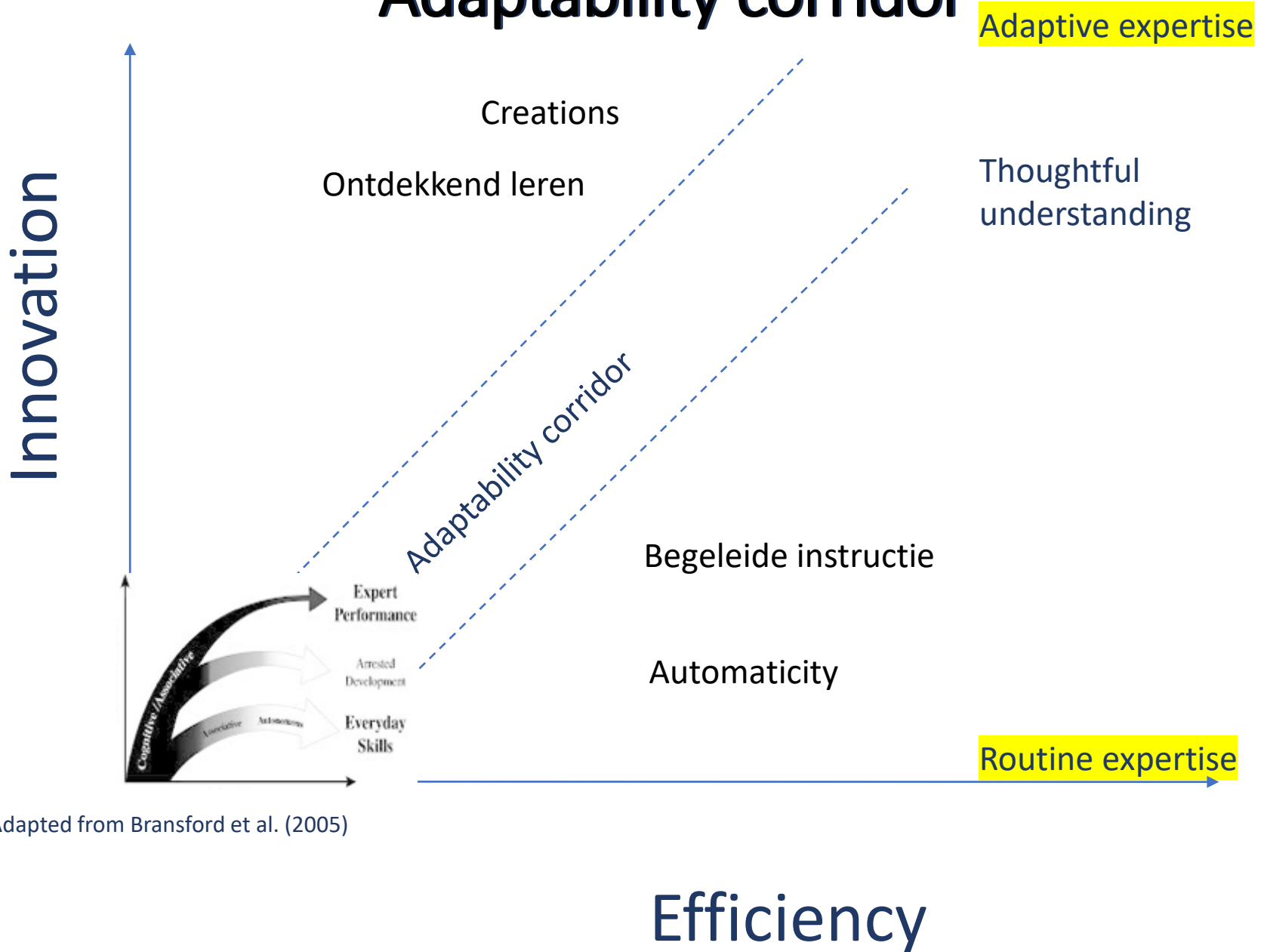
Routinematige expertise

- Efficiëntie
- Dagelijkse werkzaamheden, accuraatheid, vloeiendheid
- Practice makes perfect: deliberate practice
- Veel uren oefenen met reflectie en feedback

Adaptieve expertise

- Efficiëntie + Innovatie
- Bouwt voort op routines, efficiëntie is de basis
- Domain specifieke vaardigheden in combinatie met metacognitie, affectieve en sociale strategieën
- Inquiry based approach
(onderzoekend leren)
- Ontwikkeling gebaseerd op 'optimal adaptability corridor'

Adaptability corridor



Adapted from Bransford et al. (2005)



Leeromgevingen inrichten, enkele uitgangspunten

Ward et al. 2018; cf. Lazarra et al., 2010; Mylopoulos et al., 2018; Wallin et al., 2019

- Oefen met diversiteit aan complexe authentieke vraagstukken
- Ervaring met hoe het werken aan taken en de betekenis die aan de taak gehecht wordt kan verschillen tussen situaties (bv. multidisciplinair, interprofessioneel werken, of vanuit patiëntperspectief)
- Actieve reflectie en feedback



www.adaptatwork.nl

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www.vquest.bluefountain.nl

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