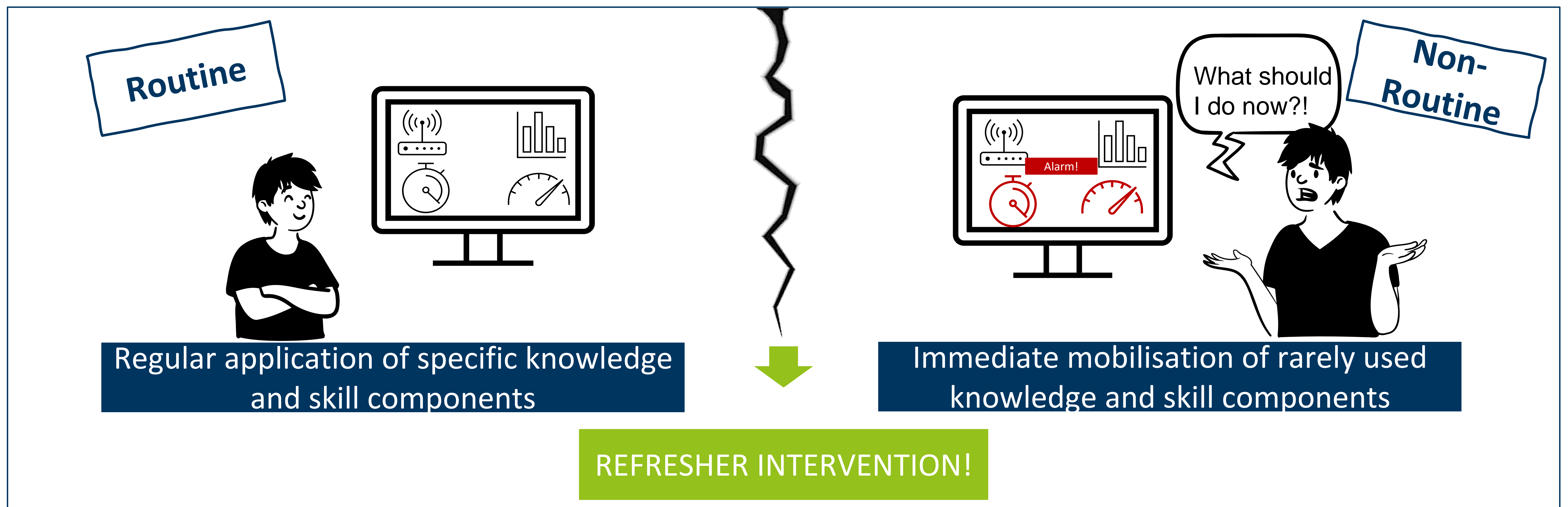


YES, I CAN: REFRESHER INTERVENTION FOR NON-ROUTINE SITUATIONS IN HIGHLY AUTOMATED WORK ENVIRONMENTS

Marina Klostermann, Stephanie Conein, Thomas Felkl, & Annette Kluge



Introduction:

The use of automation in high-risk industries can make:

- work processes more efficient
- workplaces safer

But automation poses new challenges for operators [1-4].

This infrequent use of formerly learned skills can lead to

- difficulty in recalling relevant skills
- skill decay [5,6].

The decay can be attenuated through **refresher interventions**

- i.e. re-establishment of a specific skill level that was required during the initial training but has not been practiced for a long time [7].

Research on the effectiveness of refresher interventions in highly automated and high-risk work environments is limited.

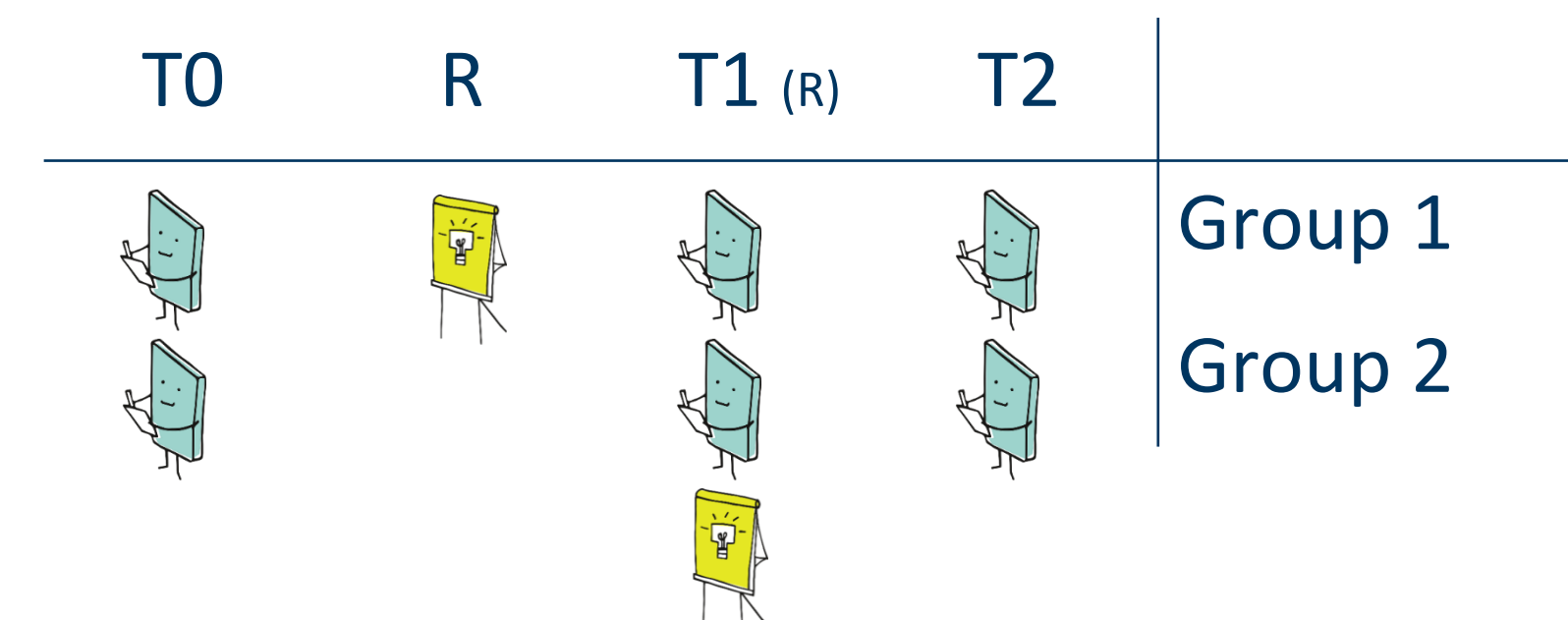


Field study at a chemical site to test the effect of a refresher intervention for non-routine situations!

Method:

Participants: Operators in a pharmaceutical/chemical production

Experiment: Field study comparing two groups of operators receiving a refresher at different time points and performing non-routine tasks.



Measures:

Predictors

- Work Experience, Motivation to Learn, Learning Style T0
- Perceived Skill Retention, Self-Efficacy, Cognitive Load T0, T1, T2

Criterion

- Performance in the non-routine task (time, error rate) T0, T1, T2

Note. At time points T1 and T2 both retention performance (same task) and adaptive performance (novel task) will be measured.

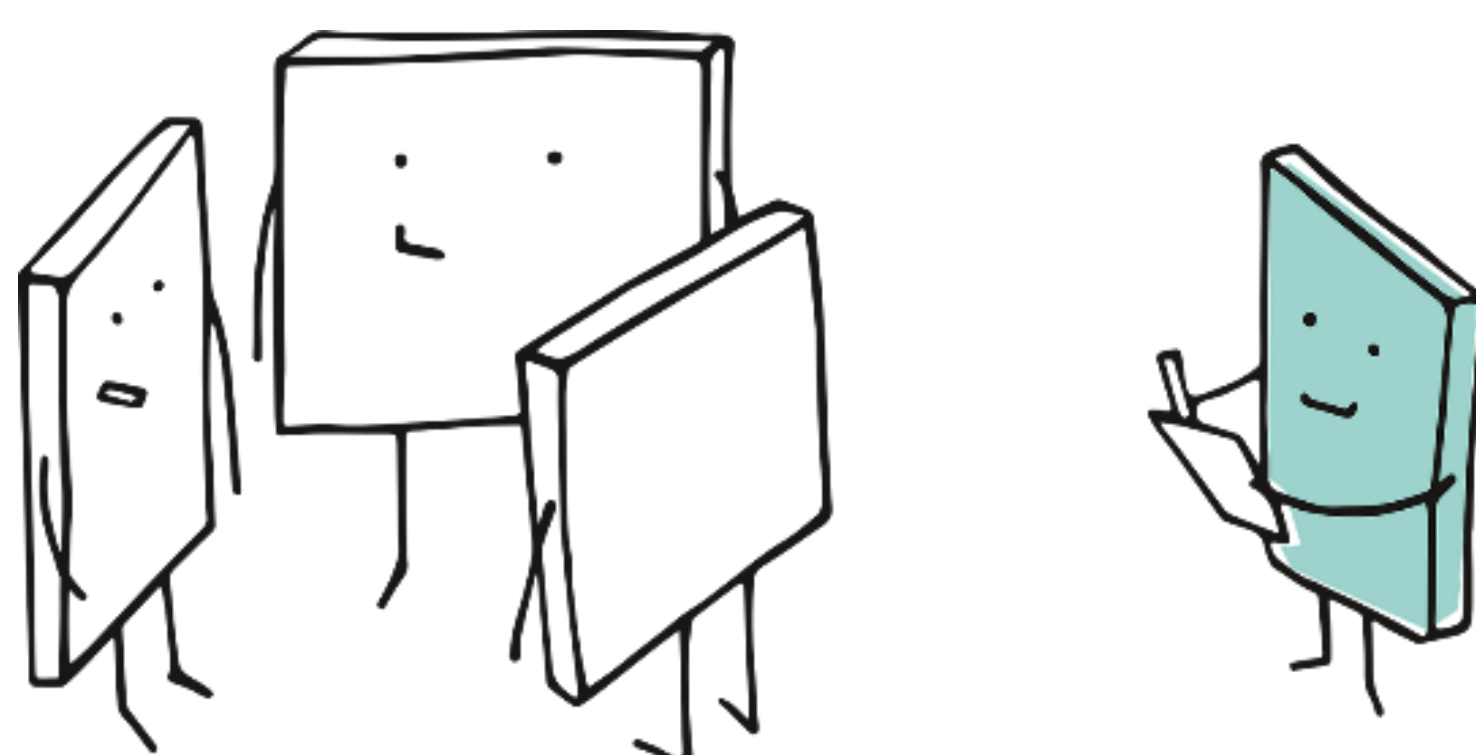
How can the refresher intervention modules be designed?

Based on a prior needs analysis, the objectives of the refresher intervention can be:

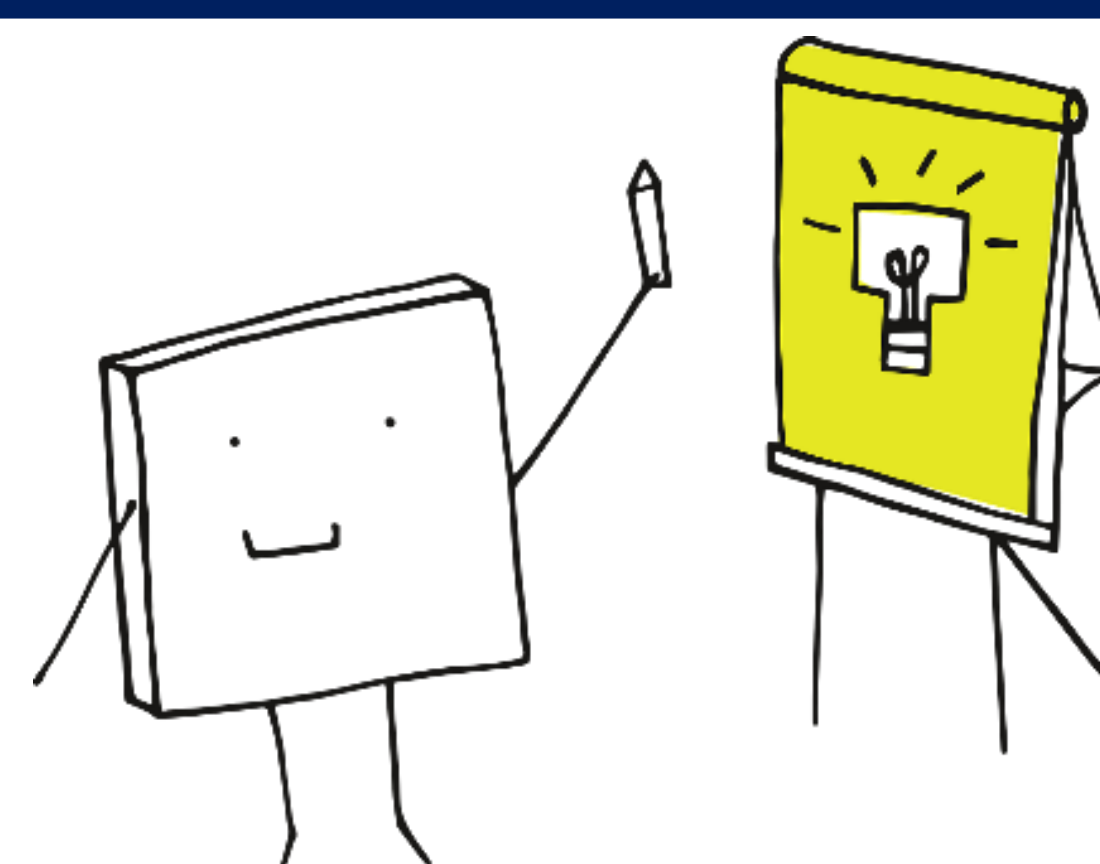
- To increase the recall of knowledge and skills among experts and inexperienced operators
- To encourage operators on their path to expert performance.

The derivation modules for the refresher intervention are based on experiential learning [8] and cognitive apprenticeship [9] approaches:

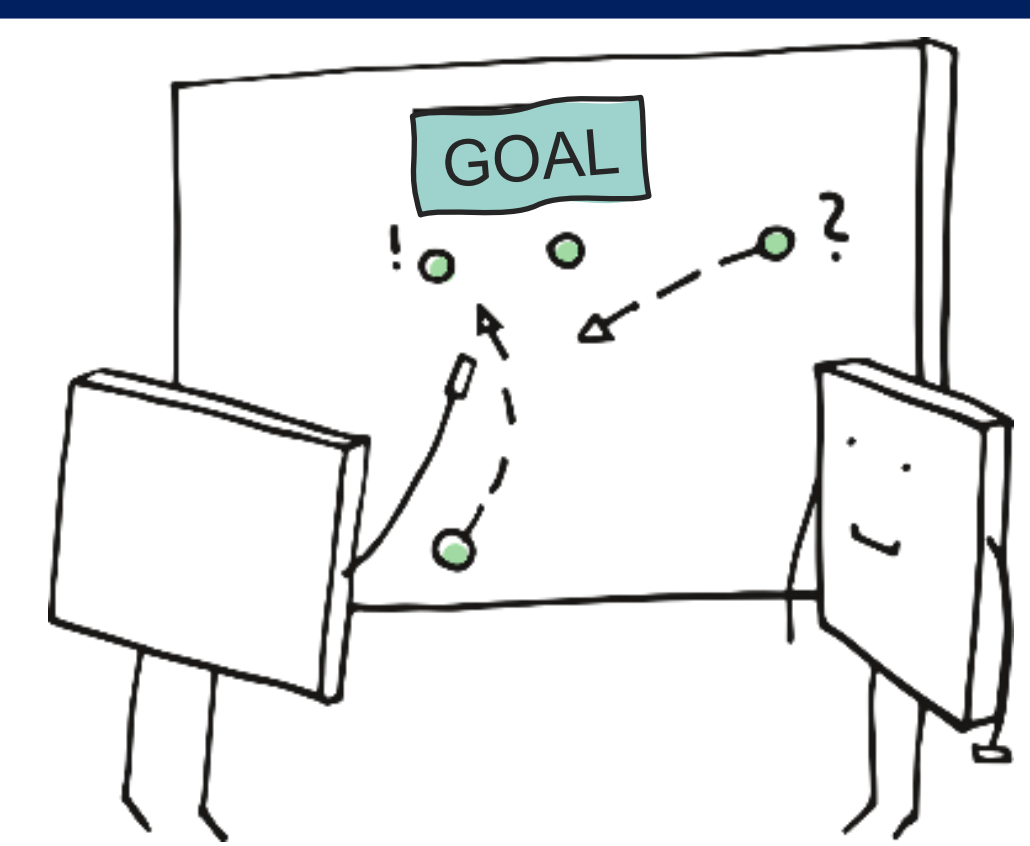
Observation & Application



Discovery



Development



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You want more information about factors influencing attenuating skill decay in high-risk industries?

