

Lean Management in a Student Engineering Laboratory: First Results



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Student Engineering Laboratory “*Schluckspecht*”



<https://schluckspecht.hs-offenburg.de/schluckspecht>

Schluckspecht



Shell Eco-Marathon



<https://schluckspecht.hs-offenburg.de/schluckspecht>

2024	3rd place Urban Concept (Combustion Engine)
2023	1st place Regional Drivers' Championship 2nd place Urban Concept (Internal Combustion Engine)
2022	2nd place Urban Concept (Combustion Engine)
2019	2nd place Autonomous Driving
2018	3rd place Autonomous Driving
2016	1st place Urban Concept (Combustion Engine)
2014	1st Place Urban Concept (Combustion Engine) Winner Shell Helix Tribology Award
...	...

Schluckspecht Lab



Photos: Marc Hug

A student's question

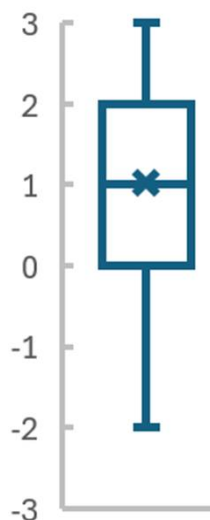
Why is our lab—where we design and build efficient, resource-saving vehicles—not efficient and resource-saving itself?





The problems:

**Students evaluation of
the order and cleanliness
within the laboratory**



Information from employees :

- general disorder
- students to spend considerable time searching for items
- students distract employees with frequent questions

**The longer students had worked on the project,
the lower they rated the lab's order and cleanliness.**

The goal:

to find a way to reorganize the laboratory, so that order and cleanliness remain at a sufficient, self-maintaining level, without burdening the employees and students with additional time-consuming tasks.

The idea of the solution:

Lean Management

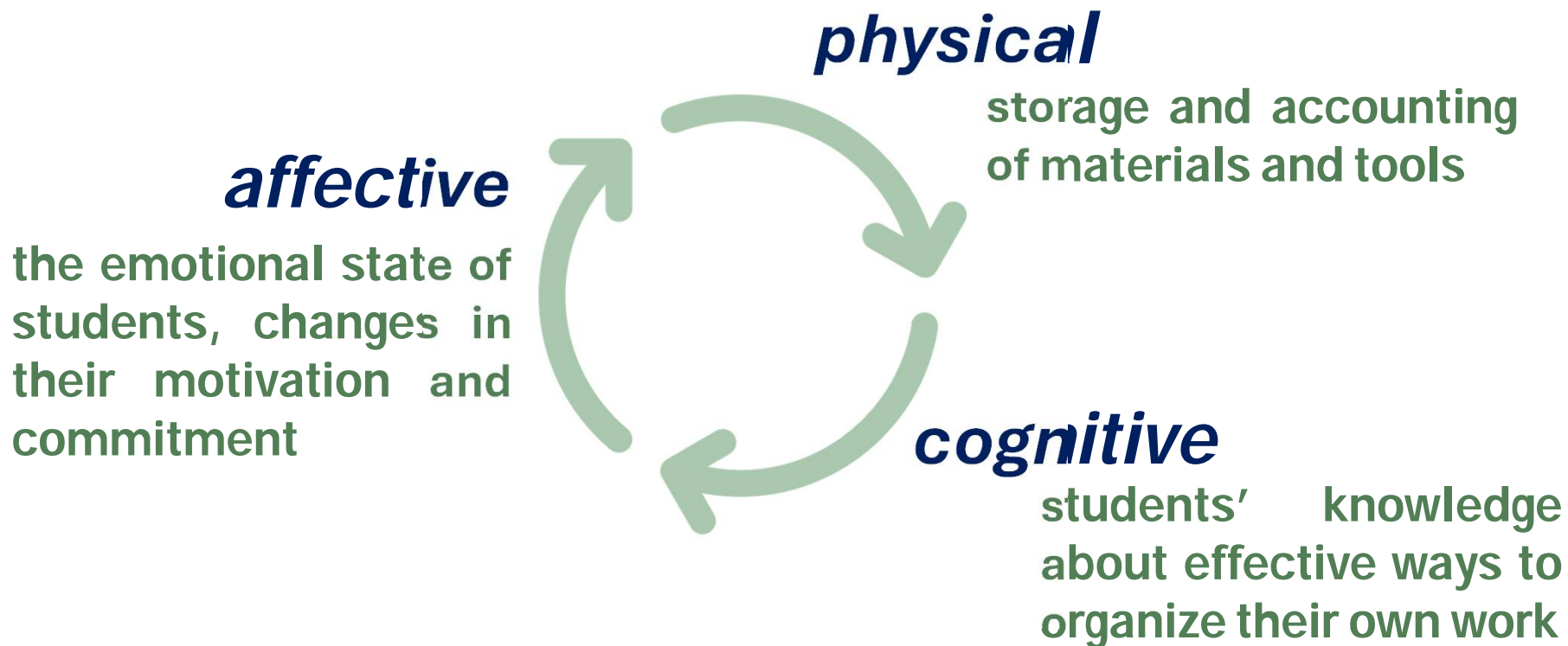
Lean Management

a quality and process improvement method with emphasis on the customer's needs, employee involvement, and continuous improvement.

What does it mean in our case?

The changes should affect various areas:
the laboratory itself
student perceptions of working in the environment.

Key aspects of the implemented changes



Pull-System / Kanban-System

Consumable items:
gloves,
protective clothing,
adhesive tapes,
sprays,
glues,
oils,
etc.

How an employee becomes
information that it is time to
order the next pack of gloves?

SCHLUCKSPECHT		SCHLUCKSPECHT	
Kanban-Karte		Kanban-Karte	
Bezeichnung	Schaumhandschuhe 7	Bezeichnung	Schaumhandschuhe 7
Foto		Beschaffung	www.arbeitshandschuh24.de
Menge	12 Paare	Art. Nr.	L-1490-144-7
Lageort	Schrank 6	Lageort (intern)	Hochregal F____
Preis	1,85 €/Paar		

First Results: Stability of the Pull-System



5S methodology
Kanban-System

SCHLUCKSPERCH	
Kanban-Karte	
Bezeichnung	Schaumhandschuhe 7
Foto	
Menge	12 Paare
Lageort	Schrank 4
Preis	1,85 €/Paar



First Results: Students' Engagement

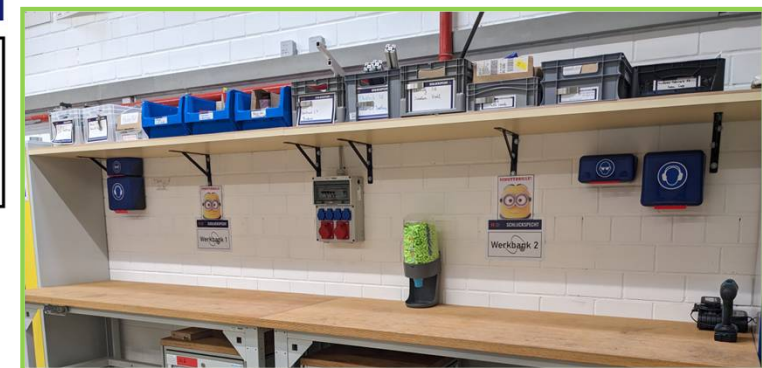


Appointment
of the
responsible
student

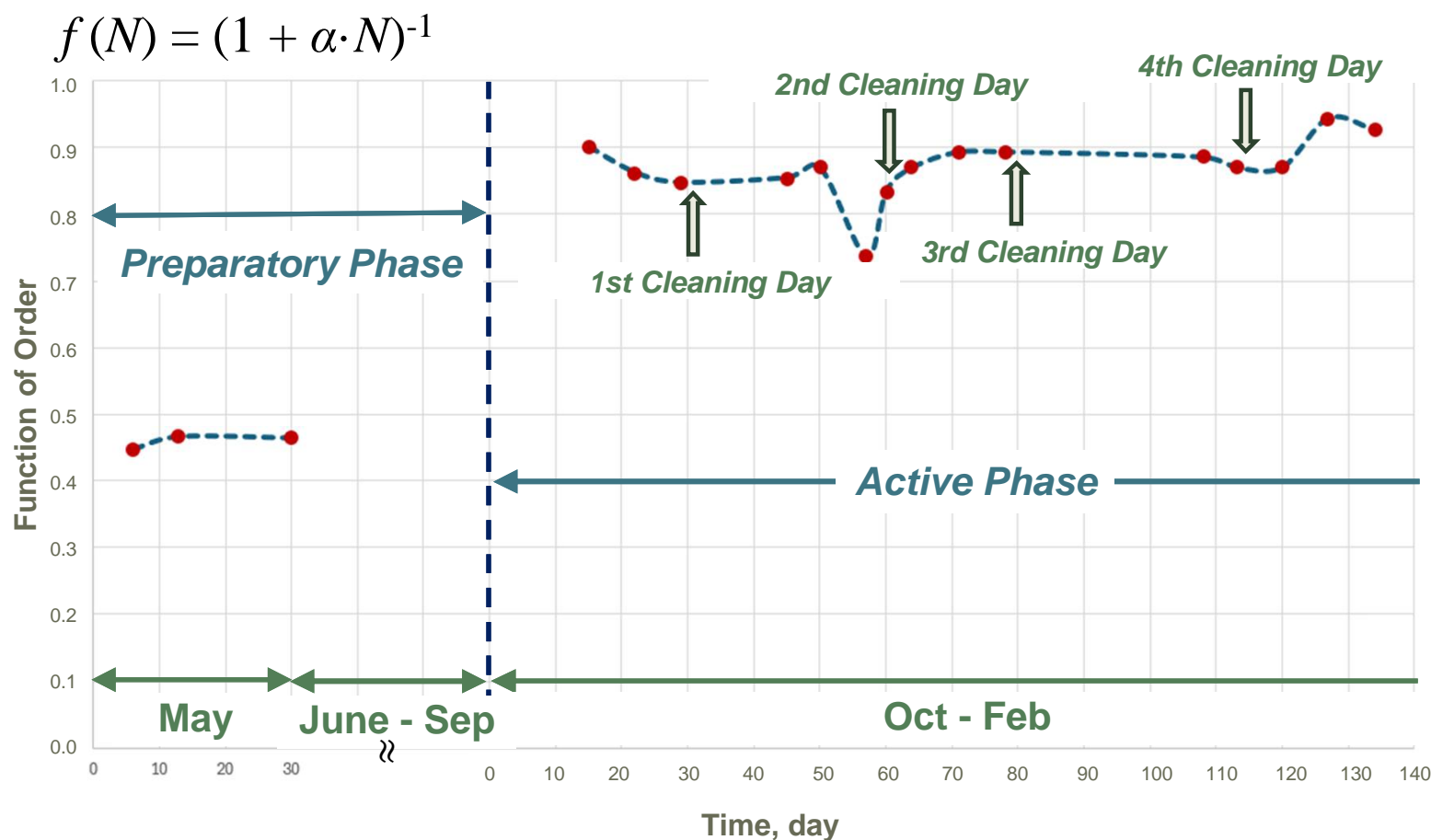


HOCH
SCHULE
OFFEN
BURG **SCHLUCKSPECHT**

CUBICAL
In diesem Bereich ist für Ordnung
und Sauberkeit
verantwortlich



First results: Function of Order



Participants
21 students from:

- mechanical engineering (12)
- biomechanics (2)
- mechatronics (4)
- medical technology (2)
- energy systems (1)

Conclusions

- The preliminary research revealed that both students and employees were dissatisfied with the state of the laboratory.
- By adopting Lean Management principles and involving students directly in the reorganization process, we achieved a noticeable improvement in the level of laboratory effectiveness.
- Measurements indicate that students were able to maintain the target laboratory state without significant additional efforts from either the staff or the students themselves.

Limitations

- it is unclear whether students will be able to maintain the sufficient level of order as work intensity increases,
- the students' subjective evaluation of the reorganized laboratory remains to be fully assessed.

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Thank you for attention!

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