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TRAINING PROGRAMME

PRACTICES AND PRINCIPLES OF SOFTWARE DESIGN

A structured learning journey

Alcor Academy's Training Programme is a structured learning path, designed to help technical teams growing foundational engineering practices.

After decades of experience in delivering and coaching XP practices and software design, we decided to collect all our knowledge into the book titled "Agile Technical Practices Distilled".

Given the success of the book and the great feedback about our coaching, we decided to structure it in a full-fledged training programme, available to a wider audience.

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3 learning phases, 18 lessons

WALKING

We begin the journey from the rules of Classic TDD focusing on interactive practice. We explain the idea of "*simplest implementation*" and gradually move to Object-Oriented Design, with exercises like "*object calisthenics*".

RUNNING

We continue with code improvements techniques like *Refactoring* and *Code Smells* recognition. We then focus on design principles practicing on *SOLID* principles, *Coupling* and *Cohesion*.

FLYING

We finish with *Connascence*, the *4 Rules of Simple Design*, test doubles, *Outside-In* and *Acceptance Test Driven Development* introducing *Behaviour Driven Development* and *Domain Driven Design*.

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RUNNING

LESSON 1

Introduction to Refactoring

LESSON 2

Code Smells

LESSON 3

Refactoring to Better Design

LESSON 4

Solid Principles ++
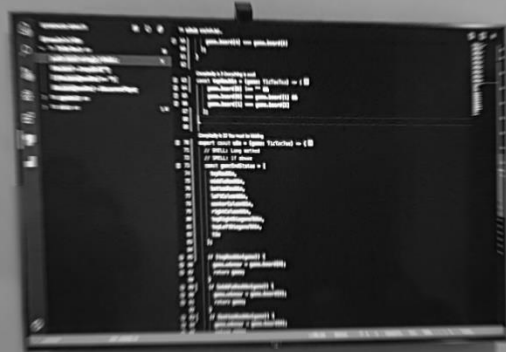
LESSON 5

Coupling & Cohesion

LESSON 6

Learn by doing: Presentation Day

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Interactive mob programming

"A mob is a bus architecture for human brains. We all hear and see what we all speak and show. It's super-fast for learning."

Tim Ottinger

navigator

driver

mob

facilitator

ROLES

Navigator
The person listened by the driver about what to do next. He has to make the final decisions and coordinate the mob.

Driver
The person typing on the keyboard. He should trust the navigator and do what is asked. He is not required to think.
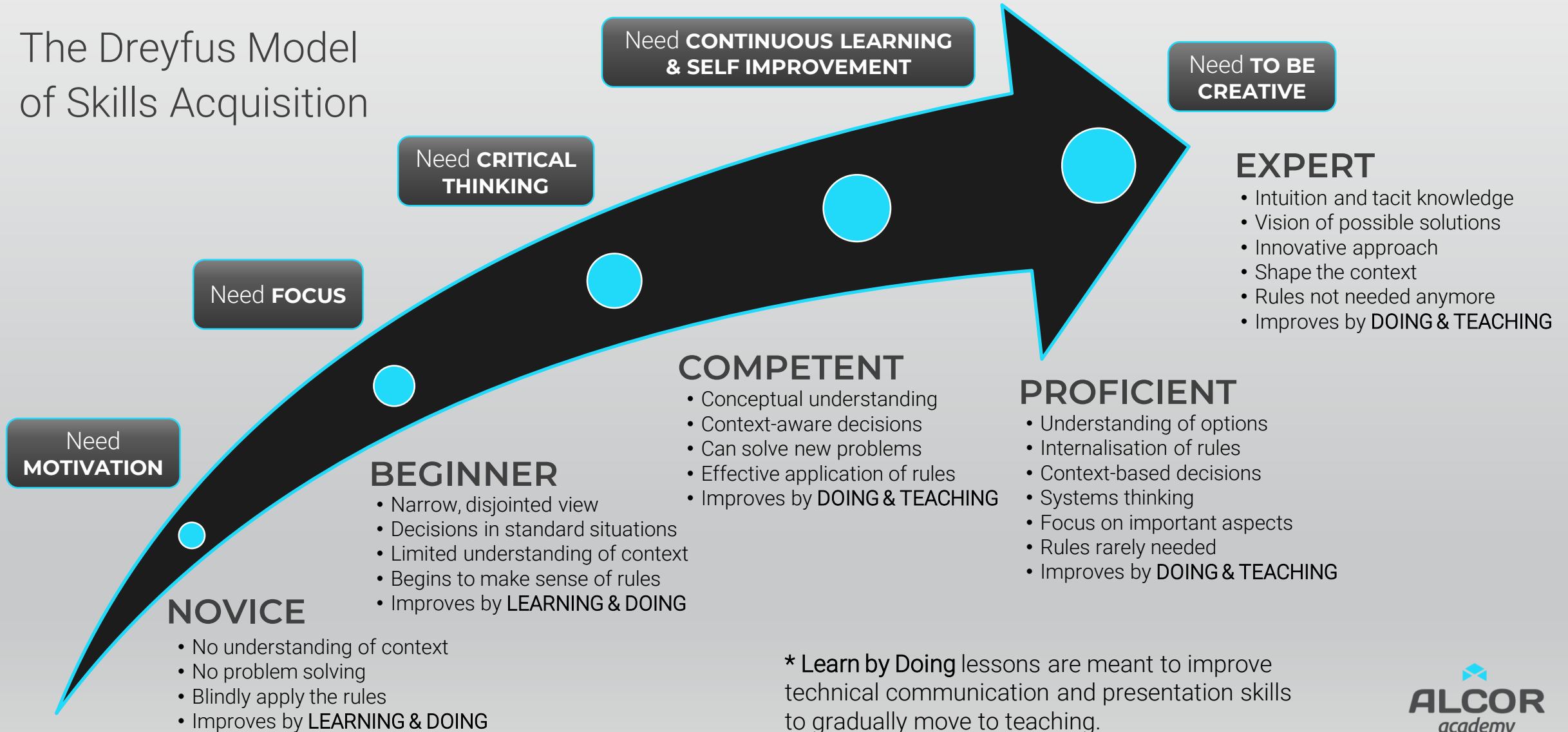
Mob
Everyone else in the room wishing to contribute actively to the task. They observe, interact and discuss with the navigator the way forward.

Facilitator (our coach)
Sits in the back, observe the flow and jumps in when necessary. This is the only role that does not rotate.

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Inspired by a proven learning model

The Dreyfus Model
of Skills Acquisition

Need **CONTINUOUS LEARNING & SELF IMPROVEMENT**

Need **TO BE CREATIVE**

Need **CRITICAL THINKING**

Need **FOCUS**

Need **MOTIVATION**

EXPERT
- Intuition and tacit knowledge
- Vision of possible solutions
- Innovative approach
- Shape the context
- Rules not needed anymore
- Improves by DOING & TEACHING

COMPETENT
- Conceptual understanding
- Context-aware decisions
- Can solve new problems
- Effective application of rules
- Improves by DOING & TEACHING

PROFICIENT
- Understanding of options
- Internalisation of rules
- Context-based decisions
- Systems thinking
- Focus on important aspects
- Rules rarely needed
- Improves by DOING & TEACHING

BEGINNER
- Narrow, disjointed view
- Decisions in standard situations
- Limited understanding of context
- Begins to make sense of rules
- Improves by LEARNING & DOING

NOVICE
- No understanding of context
- No problem solving
- Blindly apply the rules
- Improves by LEARNING & DOING

* Learn by Doing lessons are meant to improve technical communication and presentation skills to gradually move to teaching.

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⟡ Building a collaborative mindset

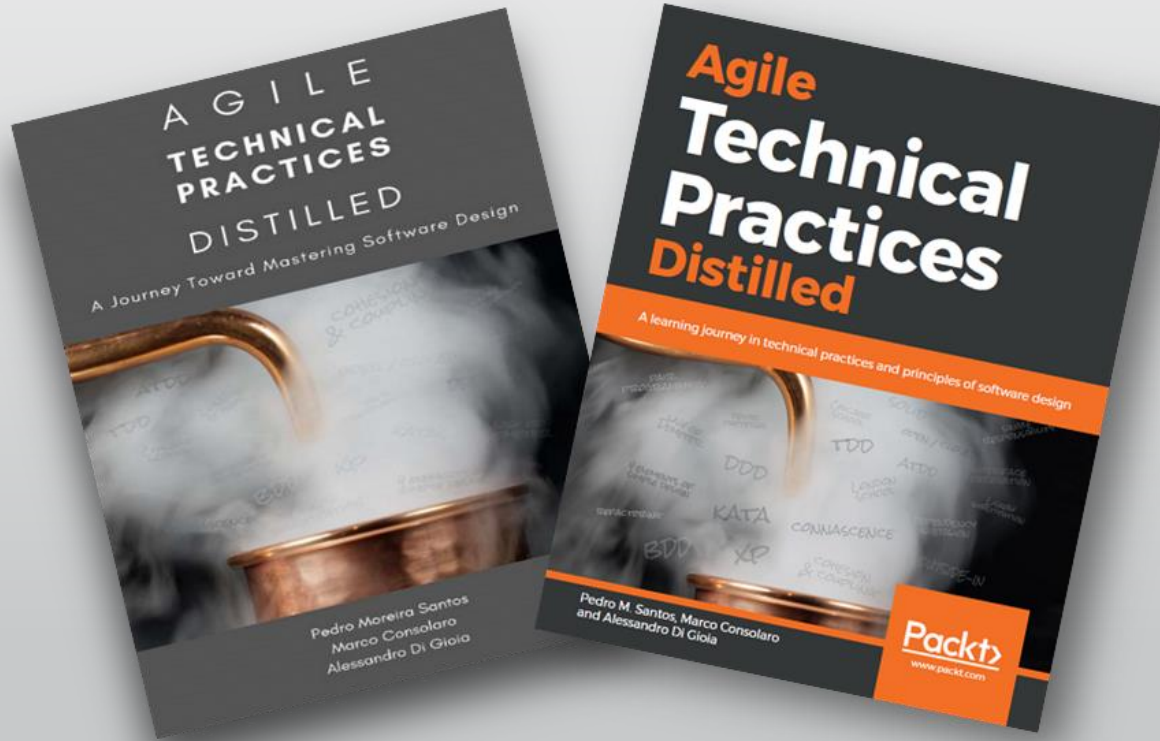In the "*The Five Dysfunctions of a Team*", Patrick Lencioni shows a model to explain and resolve root causes of teams' dysfunctions. Effective collaboration can happen only in their absence.

Inattention to Results — When there's trust, discussions and accountability, the team is strong, motivated and committed to achieving results as a group.

Avoidance of Accountability — The best and most high performing teams are where individuals hold one another to account.

Lack of Commitment — Avoiding conflicts creates artificial harmony. Teams stop committing to decisions in fear of breaking harmony.

Fear of Conflict — Healthy conflict is constructive, but can't happen without trust. All team members to have a say in decisions.

Absence of Trust — Trust is necessary in a team. It can be built showing vulnerability, sharing our challenges and being authentic.

NEW YORK TIMES BEST-SELLER

The FIVE
DYSFUNCTIONS
of a TEAM

A LEADERSHIP FABLE

PATRICK LENCIONI
AUTHOR OF THE NATIONAL BEST-SELLER *THE ADVANTAGE*

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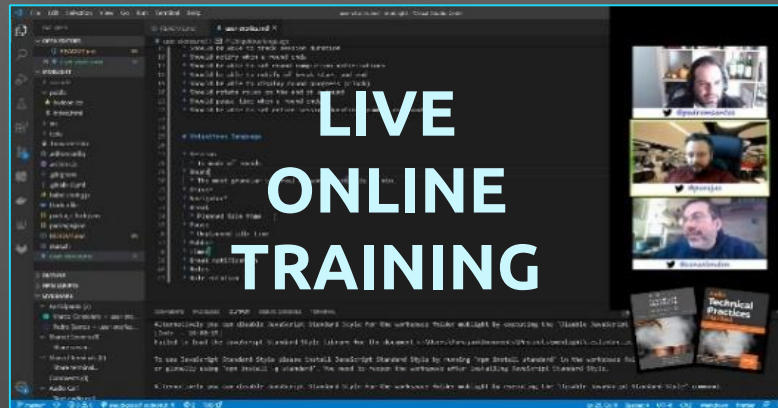# A digital copy of our book as manual

Contact us

We are based in London, UK. We serve customers worldwide. We help teams foster a collaborative learning mindset, so they keep improving everyday.

LIVE ONLINE TRAINING

ALCOR academy

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