Managing High Performance Teams

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A Quick Overview

1. The ‘H!PE’-Project
2. Team Learning: The Importance of Psychological Safety and Reflexivity on Team Learning
3. Team Competencies
4. Experimental Design Study

The ‘H!PE’ Project

Research Phase One



Formula One Pit Teams
- Technical maintenance & service during racing
- Approx. 15 - 20 members



Emergency Services Teams
- Emergency rescue services & patient transportation
- 2 paramedics and 1 physician



Police Task Force Teams
- Access & liberation in static situations
- Surveillance of persons in dynamical situations
- Approx. 5 - 20 members



Fire Department Teams
- Fire fighting & technical rescue work
- Approx. 10 fire-fighters

Research Phase Two

‚H!PE‘ Project:

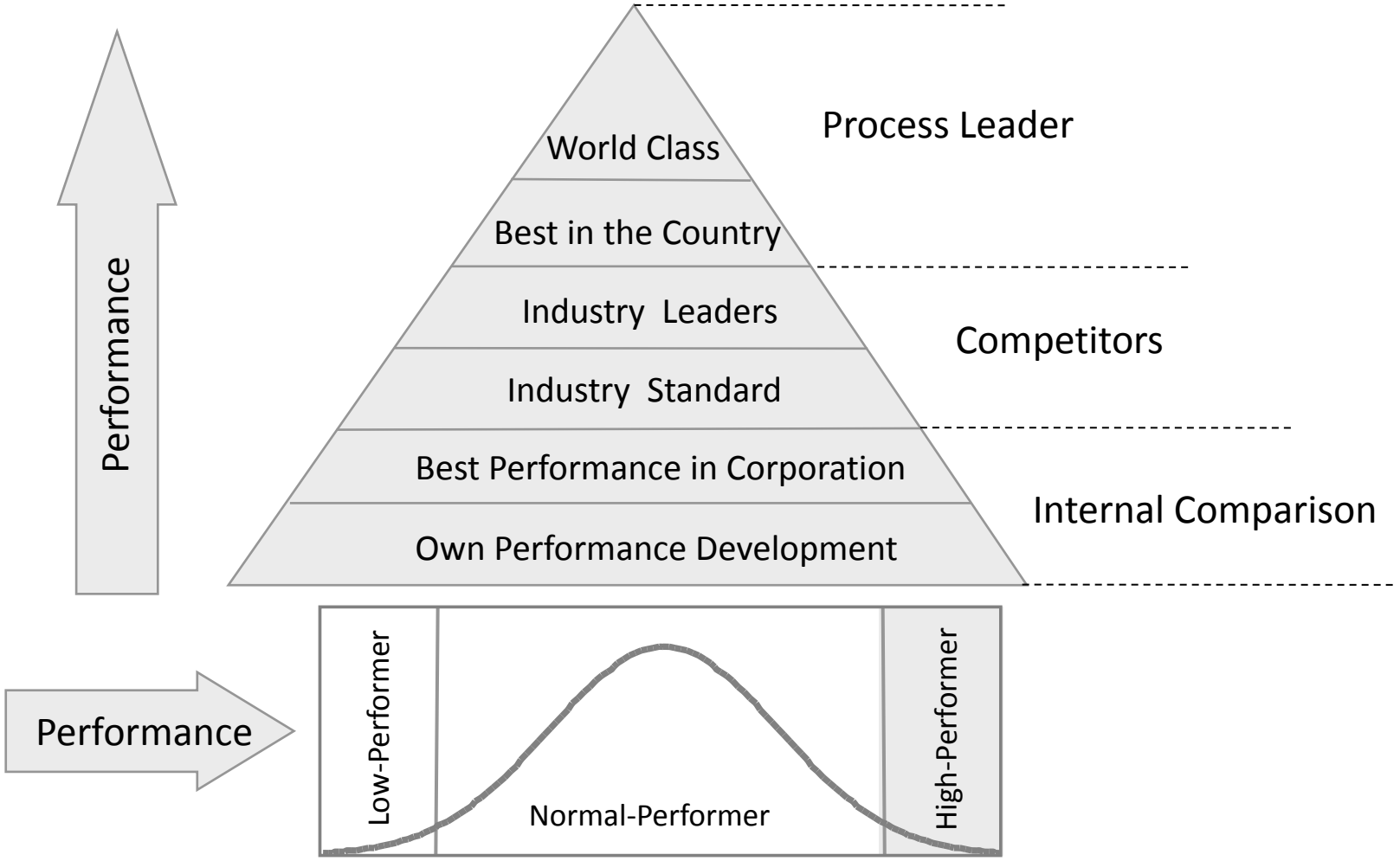
Identification & Analysis of TOP-Teams in Different Sectors







Selection of High Performance Organizations



Selected High Performance Teams

	Sector	Selected Teams	Expert Judgements, Rankings & Benchmarks	Total Number of Interviews:
	Medical Health	Helicopter Emergency Medical Services (HEMS)	expert judgements and internal ranking (e.g. tracer-diagnostics)	15 interviews in 4 organizations
	Culture	Orchestra	expert judgements and quality rankings (e.g. 'Gramophone')	8 interviews with 2 orchestras
	Sports	Sailing Crews	expert judgements and best-placed teams of the Volvo Ocean Race	10 interviews with 5 teams
	Restaurants	Gourmet Cuisine	expert judgements and star-segment (e.g. 'Michelin', 'Gault Millau')	18 interviews in 4 restaurants
	Corporation	Small- and Medium-sized Enterprises (SMEs)	expert judgements and rankings with different benchmarks	12 interviews in 4 SMEs

TOP High Performance Teams



TOP Rescue
Helicopter Teams



TOP Maintenance
& Repair Teams

Source films: ZDF Abenteuer Wissen, NDR, MDR, Toyota Deutschland



TOP Orchestras



TOP AA & VOR Sailing Teams



TOP 10 SME Teams



TOP Gourmet Cuisine Teams

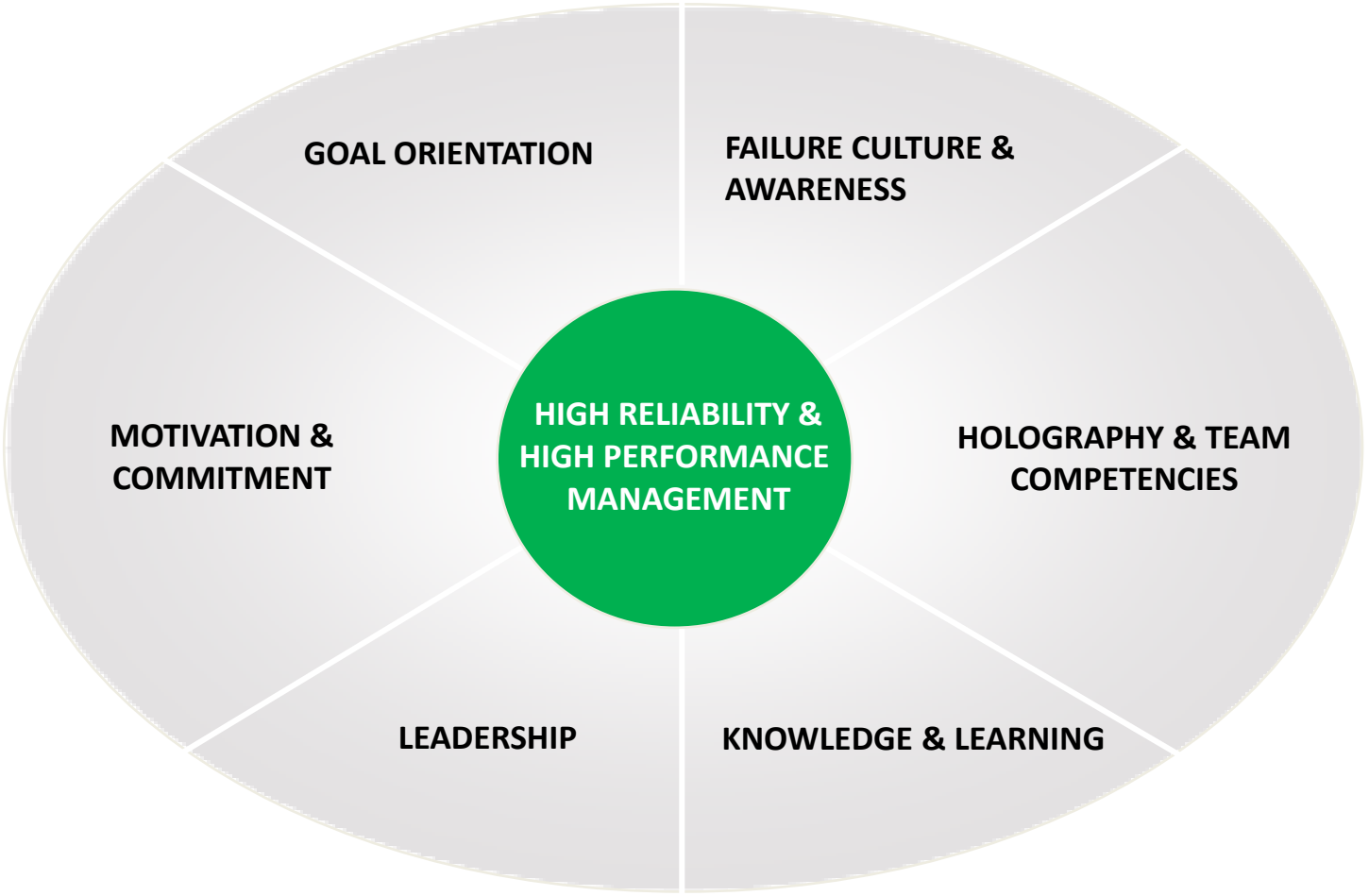
Research question

CENTRAL QUESTION:
Are there cross-sectoral key patterns underpinning the practices in high performance teams?

(1) Empirical Study

(2) Implications for Team Trainings

Findings: Common Cross-Sectoral Patterns



Findings: Common Cross-Sectoral Patterns

GOAL ORIENTATION	• Common goals & clarity of goals •Alignement of personal goals & organizational goals
FAILURE CULTURE & AWARENESS	• Awareness and sensitization for minor differences in standard situations • Recognition of ‘weak signals‘ • Preoccupation with failure
HOLOGRAPHY & TEAM COMPETENCIES	• Flexible organizational structures • Decentralized self-organisation competencies • Clear & flexible roles • Mutual performance monitoring •Transactive team memory
LEADERSHIP	• Leading through principles • Boundery management & boundary spanning • Decentral competencies • Shared dynamic leadership
MOTIVATION & COMMITMENT	• Connecting personal & organizational goals • Vision – streching goals • Flow, passion, and fun
KNOWLEDGE & LEARNING	• Reflection and experienced-based learning • Deep smarts • Development of appropriate problem-solving competencies • Redundancy of competencies • Development of team competencies

Team Learning: The Importance of Psychological Safety and Reflexivity

One closer look on Team Learning

Understanding **how** and under **which conditions** teams learn

→ Intention: Explaining why some organizations learn so much better than others do.

Several field studies: Investigation into **how** teams learn and **how** their learning affects the organizations in which they work

The Setting: HEMS Teams

Each HEMS Team is composed of:

- **a pilot**
- **an emergency physician**
- **a paramedic**

Team composition often changes









Psychological Safety - Team Learning

Psychological Safety as key construct for team learning:

A climate of perception that the team acts in a safe context for interpersonal risk taking.

Psychological safety on team level, in turn, influences team learning behaviors such as **seeking feedback, sharing information, experimenting, asking for help, and discussing errors** which then influence team performance.

A **supportive organizational context and effective coaching by the team leader** contributes to the development of perceptions of team psychological safety.

(Edmondson 1999; Edmondson/Bohmer/Pisano 2001)

Results - Interviews

Team Belief: Hypothesis on Psychological Safety 

Team Behavior: Hypothesis on Reflexivity 

Team Behavior: Hypothesis on Team Learning 

Results - Correlations

Tab.1: Summary Statistics and Correlation Table (N = 133)

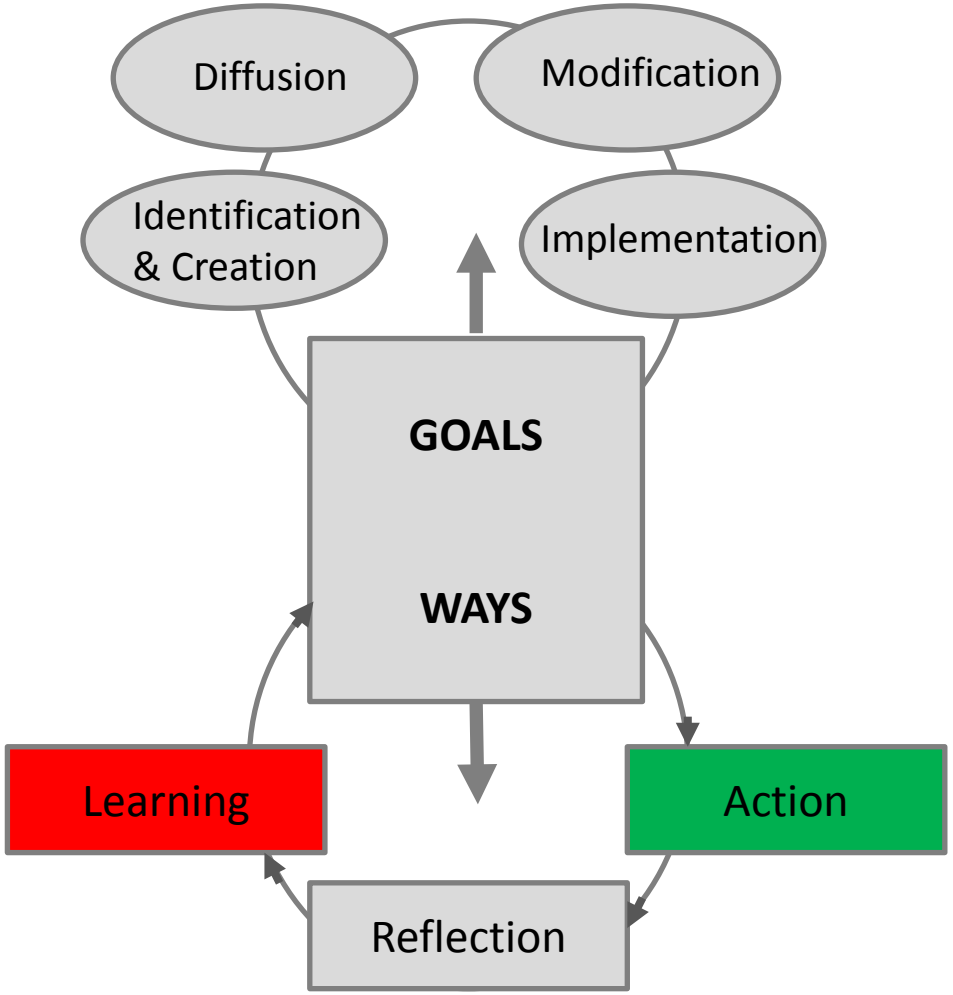
Variable	Mean	S.D.	1.	2.	3.
1. Psychological Safety	2.981	.602	.800		
2. Reflexivity	2.887	.602	**.505****	.790	
3. Team Learning	3.123	.715	**.315****	**.652****	.776

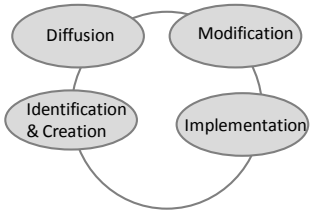
N = 133; **p < .01; Chronbach‘s alpha coefficients are represented on the diagonal.

Implication for Trainings

- Importance of Reflexivity in Team Learning
  - Behavior: reflection-in-action & reflection-on-action
- Organization: Psychological safety to enable a learning climate of discussion, innovation, and productive team thinking.
- Tools/Instruments: Briefings & debriefings, After Action Reviews, databases
- Simulation
  - High fidelity environment
  - Action Learning → ‘Triggers‘
  - Reduce errors and produce safety
- Performance measures: ‘think‘, ‘do‘, and ,‘feel‘

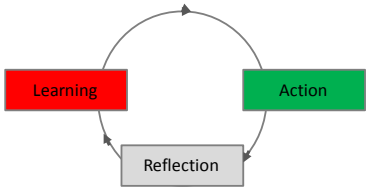
Training Concept





Development of Subject-Matter

Action / Experience	Reflection	Learning / Implementation
	Principles Evaluation 1	
ALM 1 Experience		PT Praxis of Transfer
	Principles Evaluation 2	Transfer -Meeting Praxis of Transfer
ALM 2 Experience		PT Praxis of Transfer
	Principles Evaluation 3	PT Praxis of Transfer
ALM 2 Experience		PT Praxis of Transfer



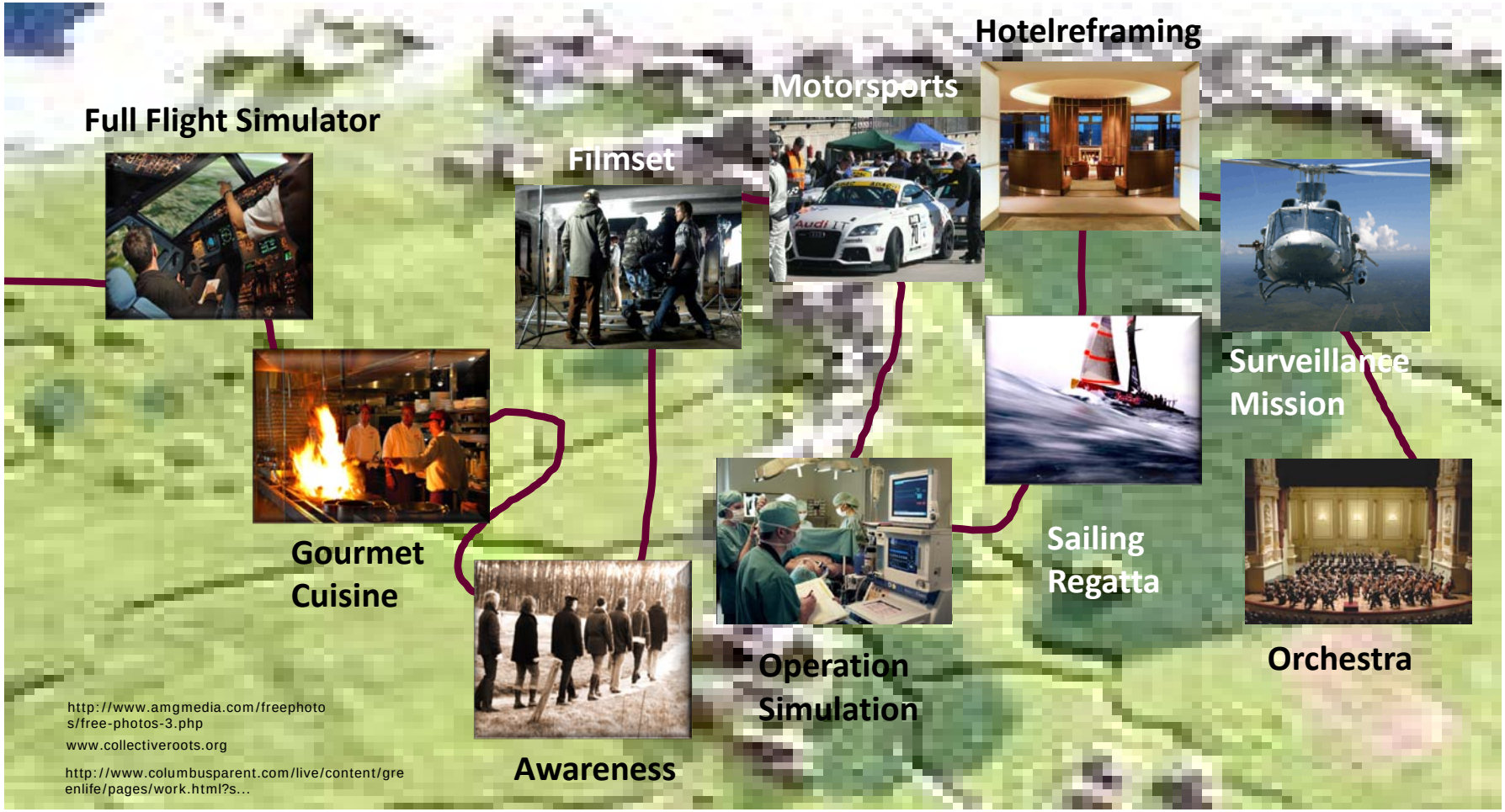
Action and Reflection

Action / Experience	Reflection
Action Learning Modules	**Principles Evaluation 1**
ALM 1 Experience	**Principles Evaluation 2**
ALM 2 Experience	
ALM 3 Experience	**Principles Evaluation 3**

Action & Learning in Context of HPOs /HROs



Action Learning Modules



Example ALM: Operation-Simulator

High Performance Principles in Medicine

GOAL ORIENTATION

Antcipate and plan

Put priorities dynamically

MOTIVATION & COMMITMENT

TEAMWORK & ROLES

Ask timely for help

Call active for teamwork

Communicate effective

FAILURE CULTURE & AWARENESS

Avoid fixed failures

Rethink and recapulate

REFLEXIVITY & KNOWLEDGE

Use checklists

Use all information

Know your work environment

Re-evaluate permantely

LEADERSHIP & ORGANIZATION

Take leader-/supporter position

Delegate

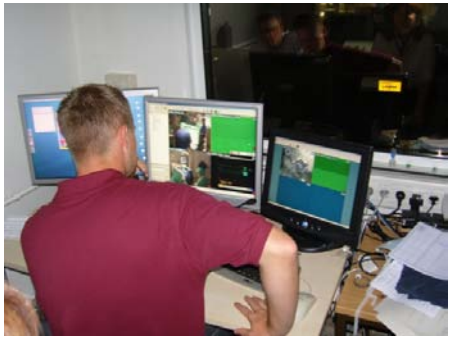
Mobilze all resources

ActionLearningModule (ALM) *OP-Simulation*:



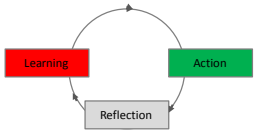
Objectives:

- Development of a shared mental model
- Ideas for transfer for own team
- Test of different methods for critical situations
- Discussions with medical team members
- Observation & analysis according to HPO-/HRO-principles by experts

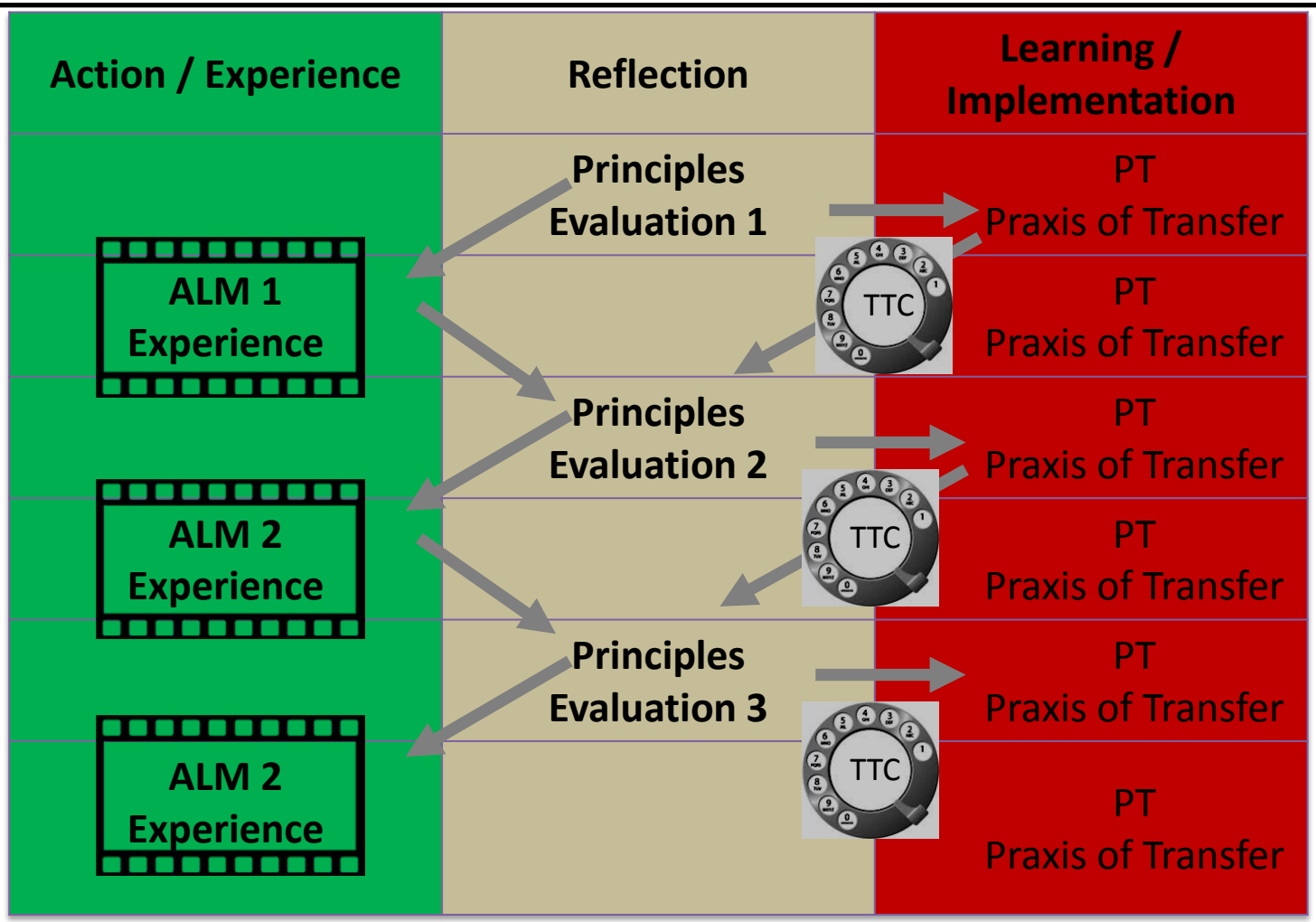








Action-Reflection-Implementation



Team Competencies

Problem and challenge







- Complex, dynamic, and critical situations require to react rapidly
- Inter-dependent teams have to activate their knowledge, resources, and coordinate their behavior to effectively handle critical situations
- Central research question: ‘How do team members cope with critical and changing situations based on their teamwork competencies?’

Theoretical background

1. Inter-disciplinary approach → literature review from different disciplines
   - *Strategic management* (e.g., RBV, DCV, CbTf),
   - *Social behavioral science* (e.g., competence-based strategic management, small group research, macro-cognition), and
   - *Applied psychology* (e.g., human factors, decision making)
2. Extant research findings of high reliability and high performance teams

→ Identification of key teamwork competencies to handle critical und unexpected situations more efficiently

Mixed method approach

Review of literature (Small Group Research, Strategic Management Research, Team Cognition, Human Factors, etc.)

↓

Qualitative study: 51 interviews of elite team members of high reliability/ high performance organizations across different settings concerning teamwork competencies
Results: Common team competencies across different sectors

Quantitative study: standardized questionnaires of elite and non-elite team members of different high reliability/ high performance organizations about teamwork competencies
Results: Presence of team competencies of elite and non-elite team members and higher degrees of dimensions at elite team members in comparison of non-elite team members

↓

Review of literature and existing behavioral marker systems (NONTECS, ANTS, etc.) → Development of a standardized case scanario with evaluation criteria to analyze taskwork and teamwork competencies of emerency rescue teams for critical situations

↓

Quasi-experimental design study: standardized observation of emergency rescue teams (divided into 'treatment groups' with prior specific training and 'control groups' without any additional training) in a high-fidelity setting. Evaluation of the collected data on two dimensions: taskwork and teamwork competencies
Results: Higher performance of emergency rescue teams with special teamwork competencies trainings in comparison to emergency teams with no trainings

Data collection

Multi-case multi-method research design of elite team members to identify team competencies

- Phase 1
  - **Semi-structured interviews** (N = 51)
  - Unstructured observation
- Phase 2
  - **Standardized questionnaires**

Test of effectiveness of team competencies of emergency rescue teams

- Phase 3
  - Quasi-experimental design

Teamwork competencies

- Task Management
- Situational Awareness
- Decision Making
- Teamwork
- Team Leadership

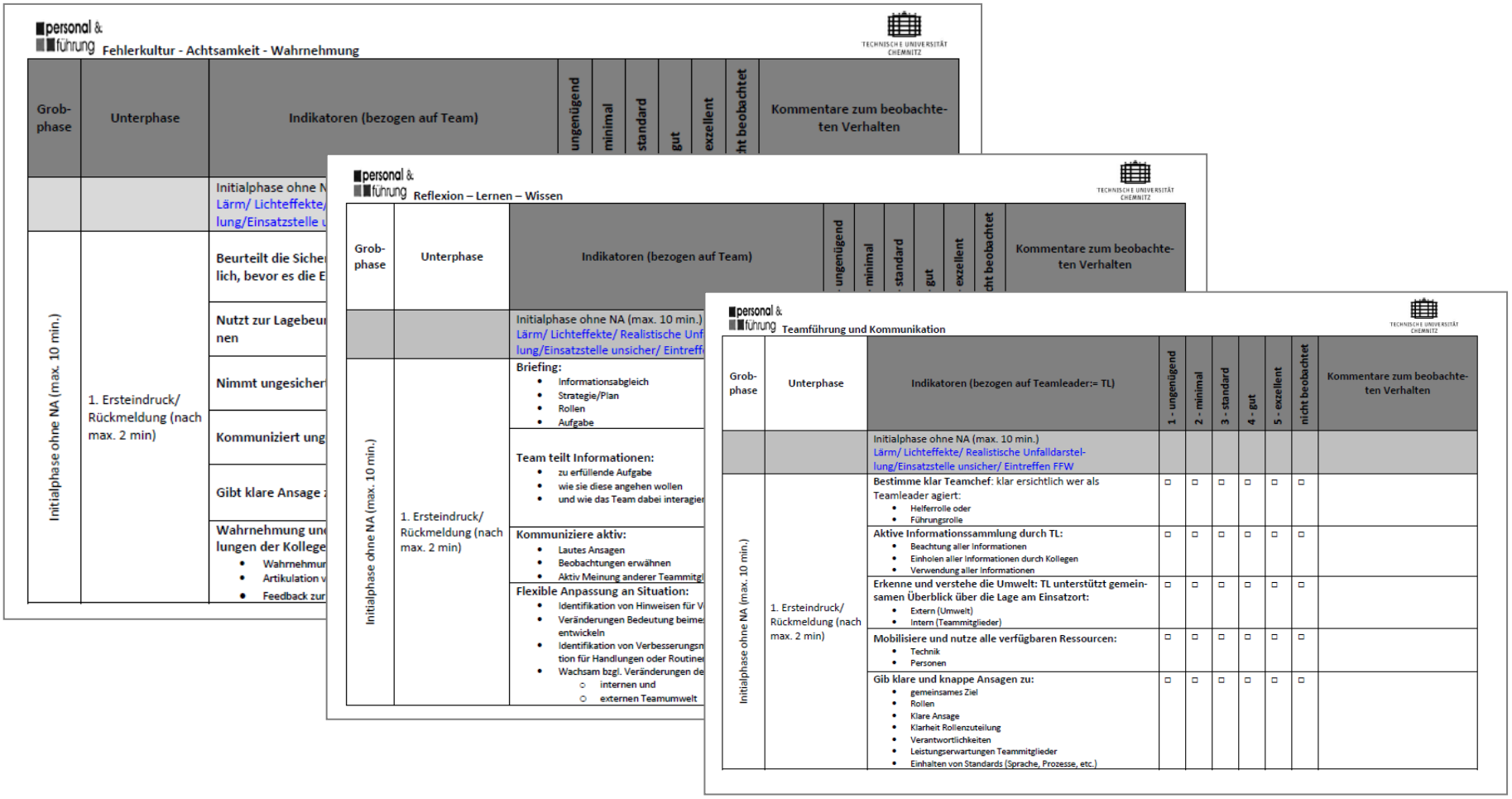
Example: Team Leadership

- Extant conceptual and empirical literature suggest three core team leadership functions:
  - (1) setting the direction for team action;
  - (2) managing team operations; and
  - (3) developing the team's capacity to manage their own problem-solving processes (Burke et al. 2006; Cohen et al. 1996; Cox et al., 2003; Fleishman et al. 1991; Hackman & Walton 1986; Kozlowski et al. 1996; Nygren & Levine,1996; Zaccaro 2001; Zeigert 2004).

Example Team Leadership

- Example items :
  Team Leader (TL) synchronizes team members' contributions.
  TL clarifies roles.
  TL facilitates team problem solving.
  TL supports information collection.
  Temporally handover of TL by competency.
  TL monitors team actions.
  TL identifies failures.
  TL guides and coordinates team members.
  TL gives feedback to self-regulation.
  TL engages in feedback session after mission.

Observation sheets



personal & führung Fehlerkultur - Achtsamkeit - Wahrnehmung

TECHNISCHE UNIVERSITÄT CHEMNITZ

Grob-phase	Unterphase	Indikatoren (bezogen auf Team)	ungenügend	minimal	standard	gut	exzellent	nicht beobachtet	Kommentare zum beobachteten Verhalten
		Initialphase ohne N Lärm/ Lichteffekte/ lung/Einsatzstelle u							
Initialphase ohne NA (max. 10 min.)	1. Ersteindruck/ Rückmeldung (nach max. 2 min)	Beurteilt die Siche lich, bevor es die E							
		Nutzt zur Lagebeur nen							
		Nimmt ungesicher							
		Kommuniziert ung							
		Gibt klare Ansage							
		Wahrnehmung un lungen der Kollege • Wahrnehmur • Artikulation v • Feedback zur							

personal & führung Reflexion – Lernen – Wissen

TECHNISCHE UNIVERSITÄT CHEMNITZ

Grob-phase	Unterphase	Indikatoren (bezogen auf Team)	ungenügend	minimal	standard	gut	exzellent	nicht beobachtet	Kommentare zum beobachteten Verhalten
		Initialphase ohne NA (max. 10 min.) Lärm/ Lichteffekte/ Realistische Unf lung/Einsatzstelle unsicher/ Eintreff							
Initialphase ohne NA (max. 10 min.)	1. Ersteindruck/ Rückmeldung (nach max. 2 min)	**Briefing:** • Informationsabgleich • Strategie/Plan • Rollen • Aufgabe							
		Team teilt Informationen: • zu erfüllende Aufgabe • wie sie diese angehen wollen • und wie das Team dabei interagier							
		Kommuniziere aktiv: • Lautes Ansagen • Beobachtungen erwähnen • Aktiv Meinung anderer Teammitgl							
		Flexible Anpassung an Situation: • Identifikation von Hinweisen für V • Veränderungen Bedeutung beime entwickeln • Identifikation von Verbesserungsn tion für Handlungen oder Routine • Wachsam bzgl. Veränderungen de ○ internen und ○ externen Teamumwelt							

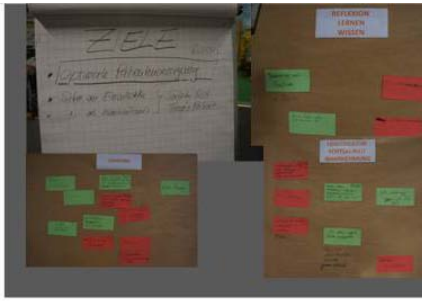
personal & führung Teamführung und Kommunikation

TECHNISCHE UNIVERSITÄT CHEMNITZ

Grob-phase	Unterphase	Indikatoren (bezogen auf Teamleader:= TL)	1 - ungenügend	2 - minimal	3 - standard	4 - gut	5 - exzellent	nicht beobachtet	Kommentare zum beobachteten Verhalten
		Initialphase ohne NA (max. 10 min.) Lärm/ Lichteffekte/ Realistische Unfalldarstel- lung/Einsatzstelle unsicher/ Eintreffen FFW							
Initialphase ohne NA (max. 10 min.)	1. Ersteindruck/ Rückmeldung (nach max. 2 min)	**Bestimme klar Teamchef:** klar ersichtlich wer als Teamleader agiert: • Helferrolle oder • Führungsrolle	□	□	□	□	□	□	
		Aktive Informationssammlung durch TL: • Beachtung aller Informationen • Einholen aller Informationen durch Kollegen • Verwendung aller Informationen	□	□	□	□	□	□	
		Erkenne und verstehe die Umwelt: TL unterstützt gemeinsamen Überblick über die Lage am Einsatzort: • Extern (Umwelt) • Intern (Teammitglieder)	□	□	□	□	□	□	
		Mobilisiere und nutze alle verfügbaren Ressourcen: • Technik • Personen	□	□	□	□	□	□	
		Gib klare und knappe Ansagen zu: • gemeinsames Ziel • Rollen • Klare Ansage • Klarheit Rollenzuteilung • Verantwortlichkeiten • Leistungserwartungen Teammitglieder • Einhalten von Standards (Sprache, Prozesse, etc.)	□	□	□	□	□	□	

Experimental Design Study

Training approach of team competencies



A) Training approach

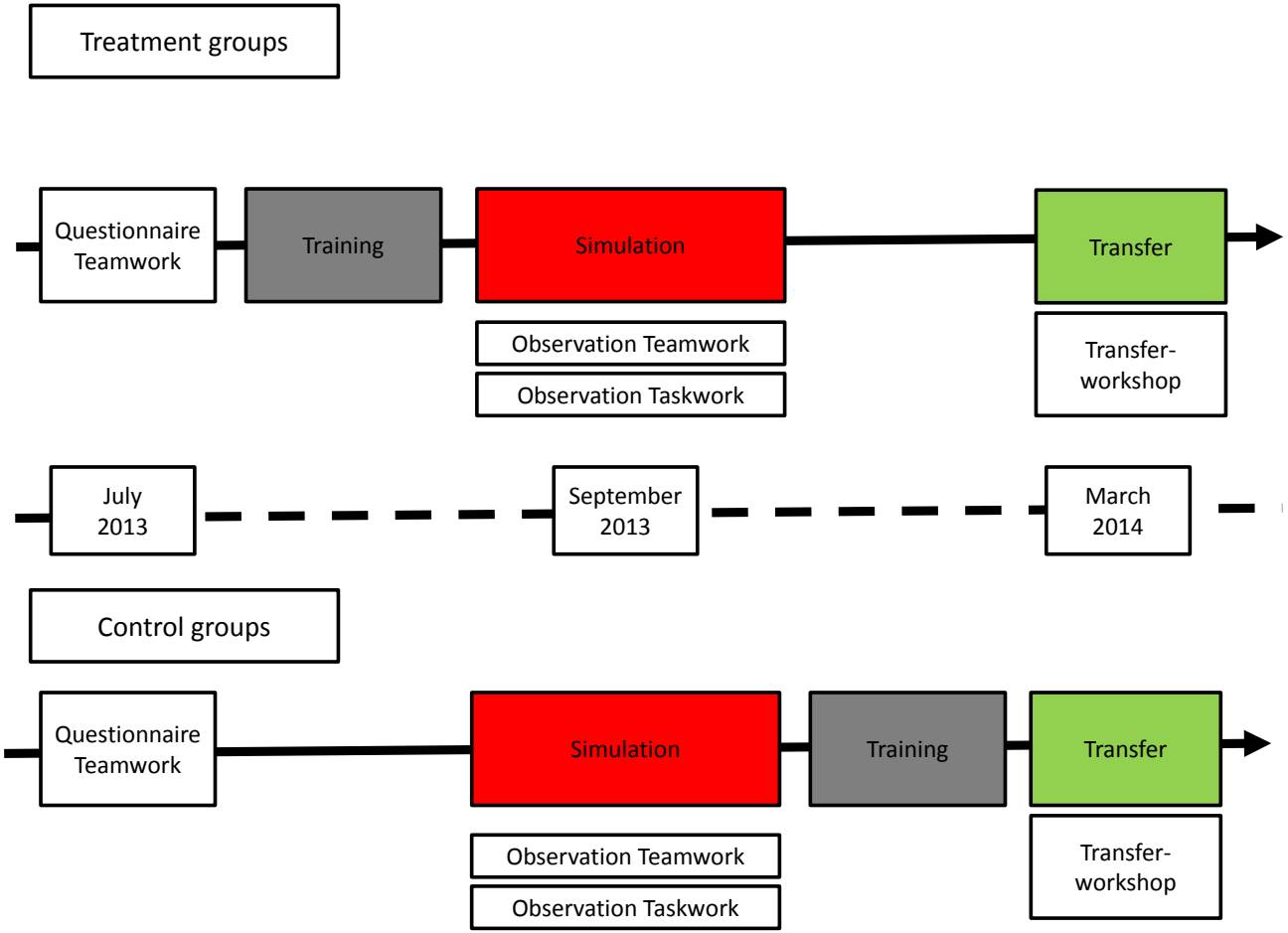
1. Common goals for team mission (positive and negative factors)?
2. Create tutorial videos to improve team competencies (good and bad practices)



B) Simulation



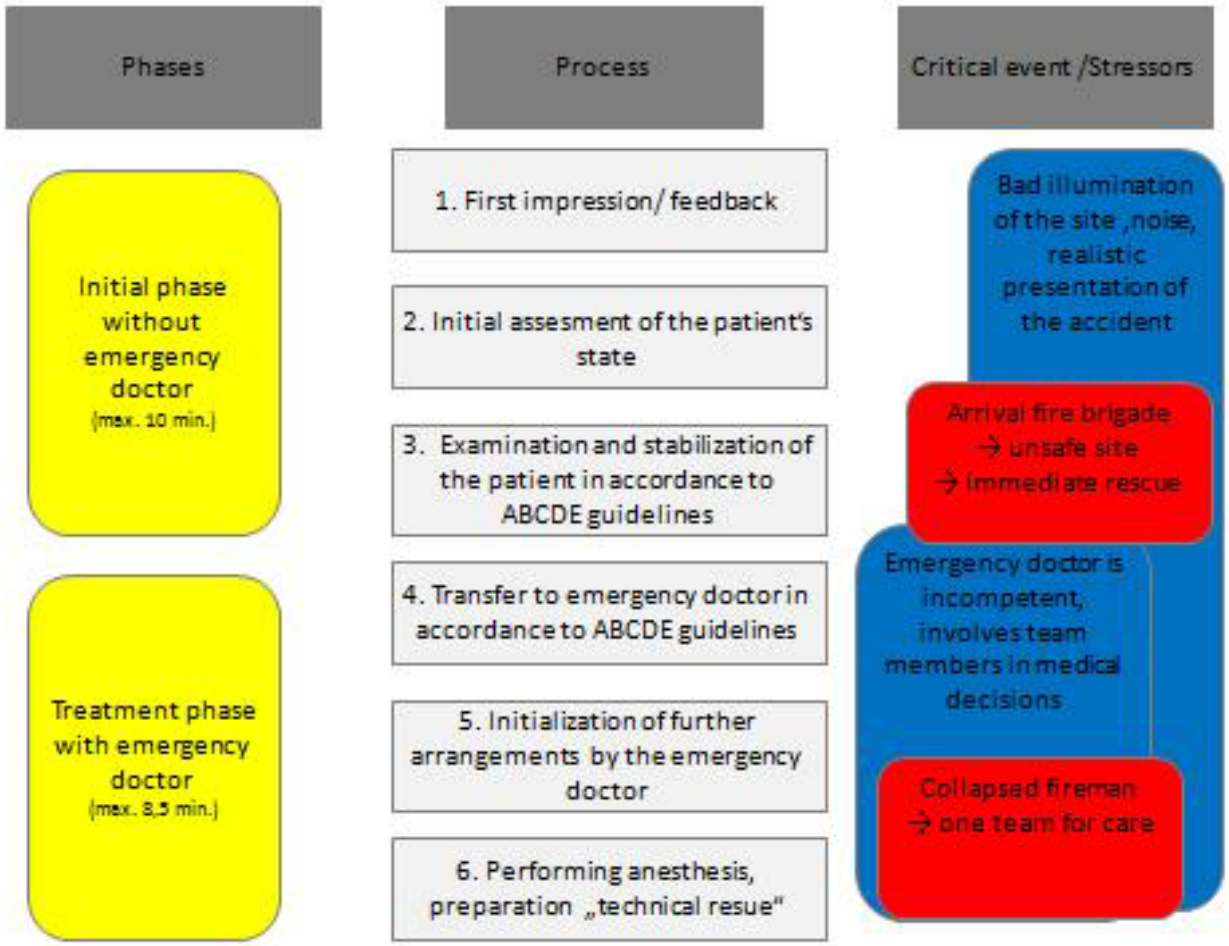
Design Phase 3



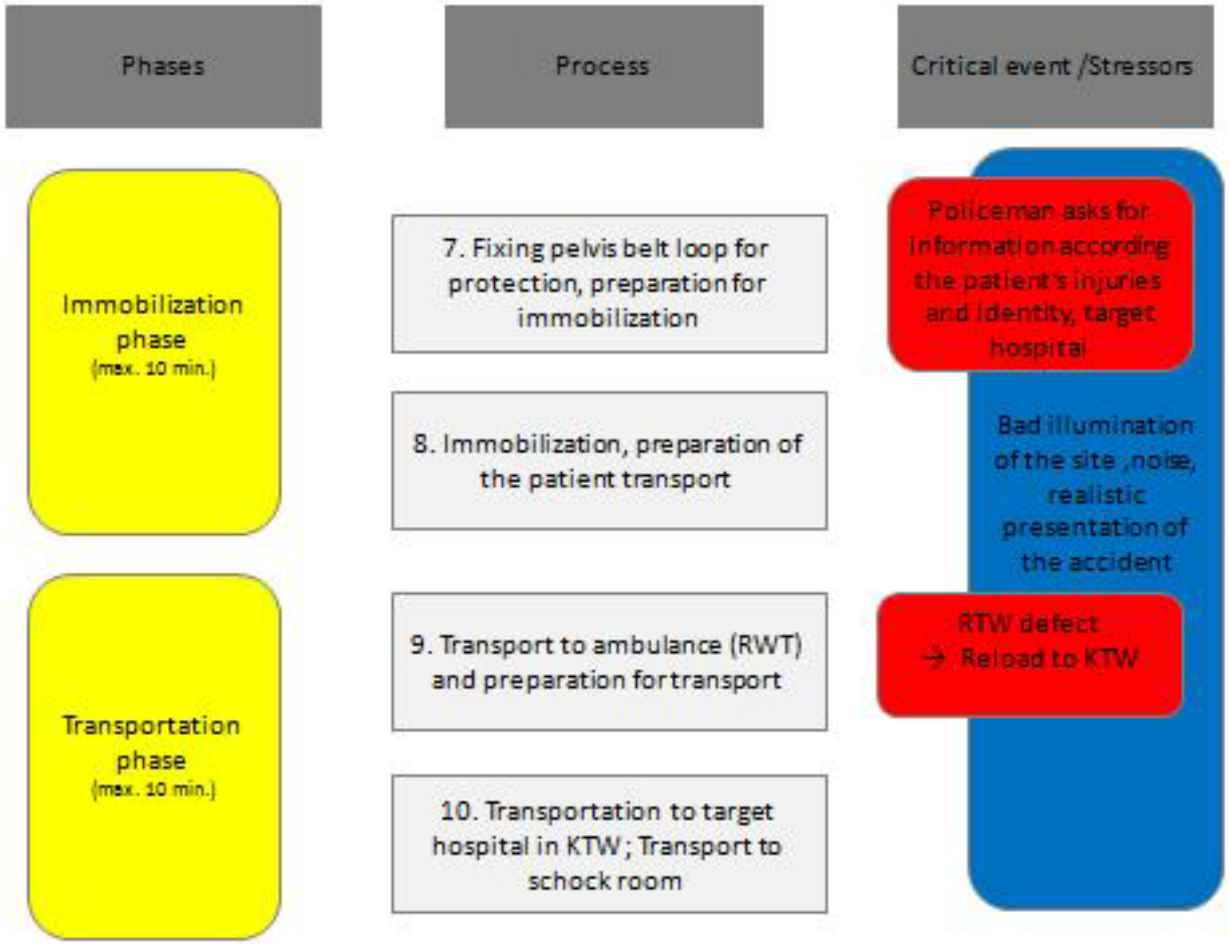
Scenario ‘Trauma Management’

- High fidelity environment to systematically observe real-world emergency rescue teams
- Construction of a standardized trauma management exercise with additional critical situations
- Involvement of specific tasks that are not standard routines for emergency teams → focus on the teams’ capabilities to deal with extraordinary challenges and unforeseeable situations
- Observation of teams’ taskwork and teamwork behaviors by Subject Matter Experts (SME)

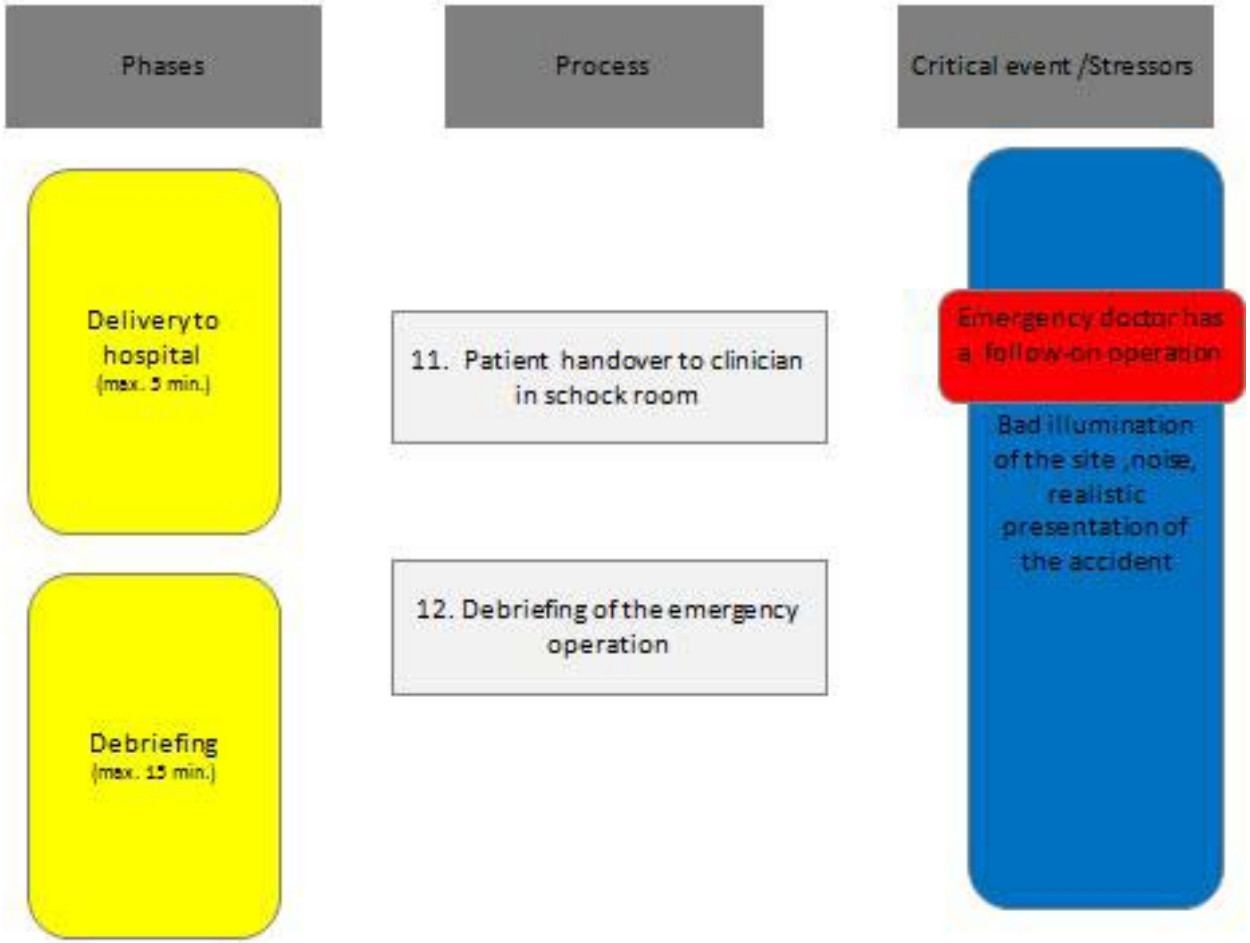
Case


Phases
Process
Critical event /Stressors
Initial phase without emergency doctor (max. 10 min.)
Treatment phase with emergency doctor (max. 8,5 min.)
1. First impression/ feedback
2. Initial assesment of the patient's state
3. Examination and stabilization of the patient in accordance to ABCDE guidelines
4. Transfer to emergency doctor in accordance to ABCDE guidelines
5. Initialization of further arrangements by the emergency doctor
6. Performing anesthesis, preparation „technical resue"
Bad illumination of the site ,noise, realistic presentation of the accident
Arrival fire brigade → unsafe site → immediate rescue
Emergency doctor is incompetent, involves team members in medical decisions
Collapsed fireman → one team for care

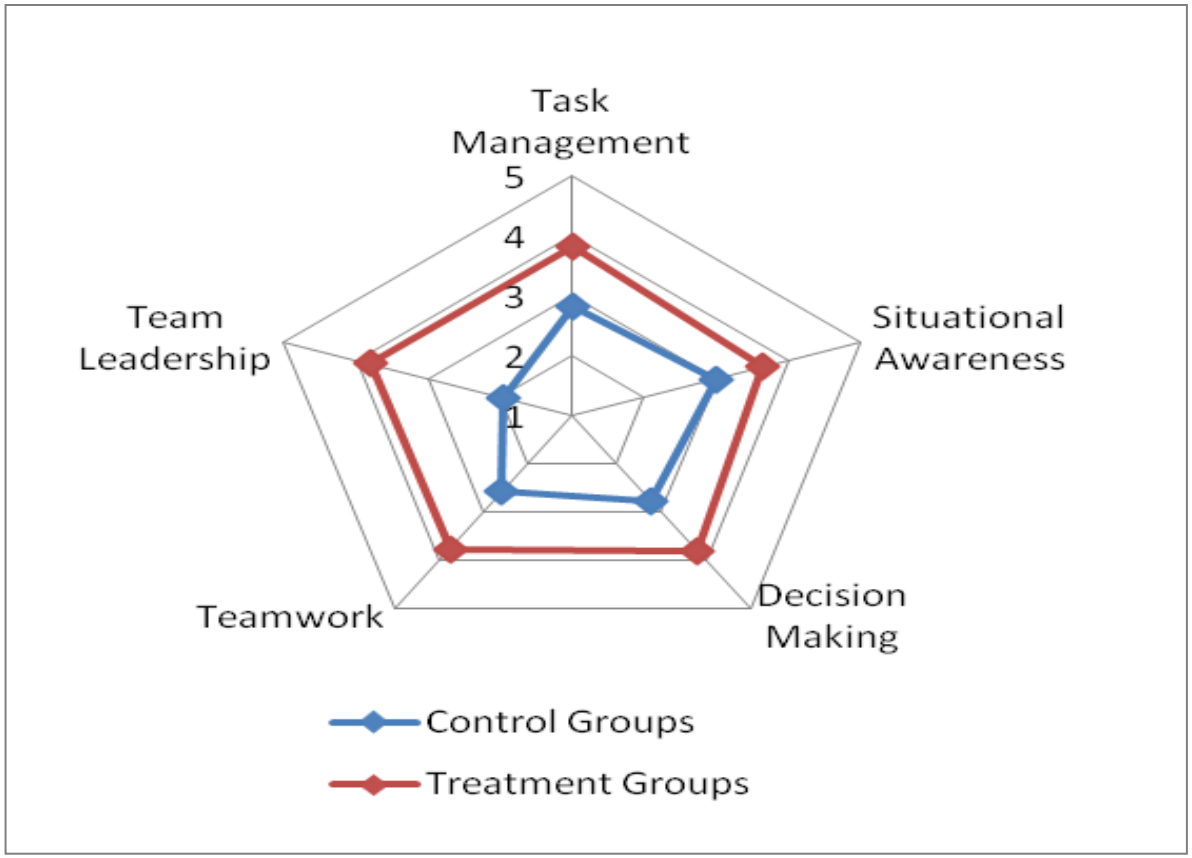
Case


Phases
Process
Critical event /Stressors
Immobilization phase (max. 10 min.)
Transportation phase (max. 10 min.)
7. Fixing pelvis belt loop for protection, preparation for immobilization
8. Immobilization, preparation of the patient transport
9. Transport to ambulance (RWT) and preparation for transport
10. Transportation to target hospital in KTW ; Transport to schock room
Policeman asks for information according the patient's injuries and identity, target hospital
Bad illumination of the site ,noise, realistic presentation of the accident
RTW defect → Reload to KTW

Case


Phases
Process
Critical event /Stressors
Delivery to hospital (max. 5 min.)
11. Patient handover to clinician in schock room
Emergency doctor has a follow-on operation
Bad illumination of the site , noise, realistic presentation of the accident
Debriefing (max. 15 min.)
12. Debriefing of the emergency operation

Results Phase 3



1: inefficient, 2: poor, 3: standard, 4: good, 5: excellent

Many thanks for your attention!

Selected literature

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