Trainers' activity during simulations and use of video during debriefings in firefighter training

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Firefighter field

- Firefighters = first to arrive at a fire scene

- Head of operations = firefighter with the higher rank

Cadres	Ranks	Certificates	Roles
Senior officers (senior level)	Colonel	/	Management
	Major	OFF3	
Officers (senior level)	Captain	OFF2	
	Lieutenant	OFF1	
Non-commissioned officers (mid-level)	Warrant Officer	M02	Operational
	Sergeant	M01	
Enlisted (base level)	Corporal	B02	
	Firefighter	B01	

Firefighter training

- Certificates: requirement for accessing some ranks

  ↳ **sergeant :**

  - first head of operations (until the officer's arrival)
  - conducts the 1st situation analysis
  - draws up a preliminary action plan
  - directs the firefighting team

How to prepare operational sergeants to ensure this role?

➤ Simulation-based training

Firefighter training

Briefing

Simulation

Moment to share the challenging elements encountered in simulation

Hot debriefing

Feedback on the activity carried out in simulation

Cold debriefing

to support debriefing activities
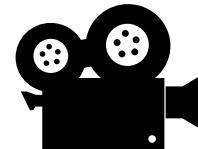
Video-assisted debriefing

- Tool supporting trainers' activity

- Allows retrospective analysis

- Highlights specific moments

Use depends on trainers' personal characteristics

Sawyer et al. (2016); Tochon (1996); Karlgren et al. (2020); Dismukes et al. (2006); Alonso Vilches et al. (2021)

The trainer paradigm

Expert-trainer

- Expertise is sufficient to train others

- Prepare the next generation

- Reminds rules and provides corrective feedback
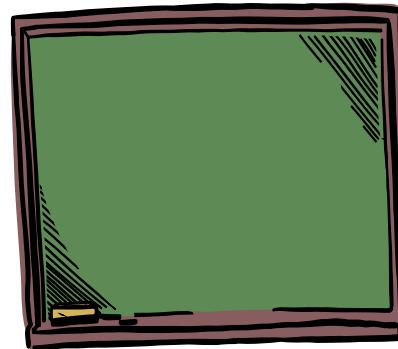
Trainer-facilitator

- Training expert

- Enables learners to take an active part in the training

And in professional training ?

Alonso Vilches et al. (2021)

Who mostly stops the video ?

What elements of the sergeant's activity are discussed during the stops ? Are these elements considered challenging by the candidates ?

What are the functions of the trainer's interventions during debriefing ?

Method

- 40 candidates divided into 4 groups
- 1 lieutenant-trainer with a 40-hour pedagogical training course

initiated by the candidates or the trainer

classified into 3 cateogries: safety management, order and command, tactics

Examination of 3 dimensions: **origin** of the stops, **elements leading** to a stop, **functions of the trainer's interventions** during these stops

classified into 5 functions: Dubois & Van Daele (2018)
- evaluative
- pedagogical (expository, interrogative and incentive)
- psychologoical
- social
- structuring

Results

Origin of the stops

	G1	G2	G3	G4	Total
Trainer	105 (91.3 %)	82 (87.2 %)	69 (98.6 %)	52 (96.3 %)	308 (92.5 %)
Candidates	10 (8.7 %)	12 (12.8 %)	1 (1.4 %)	2 (3.7 %)	25 (7.5 %)

- review previously stated rules, "once again, no cross-checking"
- ask the trainer for guidance in a particular situation, "should we have dealt with the smoke?"

# Results

Elements discussed during cold and hot debriefing

		Aspects of the sergeants' activity discussed during cold debriefing	Challenges
Safety	Safety	15.5 %	4/40 (10 %)
Order and command	Command	16.5 %	24/40 (60 %)
	Communication	13.8 %	5/40 (12.5 %)
Tactics	Decision-making	14.5 %	3/40 (7.5 %)
	Situation awareness	10.5 %	12/40 (30 %)
	Information search	7.3 %	0/40 (0 %)
	Time management	5.8 %	1/40 (2.5 %)
	Equipment management	3.3 %	1/40 (2.5 %)
	Priorization	1.5 %	10/40 (25 %)

Results

Functions of the trainer's interventions

		G1	G2	G3	G4	Total
Pedago gical	Expository	58.1 %	64.6 %	77.5 %	75.4 %	68.9 %
	Interrogative	33.3 %	23.2 %	14.1 %	9.4 %	20.0 %
	Incentive	3.2%	3.7 %	1.4 %	5.7 %	3.5 %
Evaluative		1.1%	2.4 %	0.0 %	1.9 %	1.9 %
Psychological		0.0 %	1.2 %	1.4 %	1.9 %	1.9 %
Social		4.3 %	4.9 %	4.2 %	5.7 %	5.7 %
Structuring		0.0 %	0.0 %	1.4 %	0.0 %	0.4 %
Total		100 %	100 %	100 %	100 %	100 %

Discussion
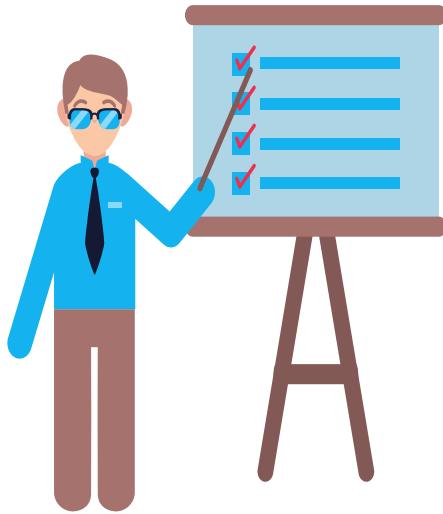
- Initiates most stops
- Uses sessions to offer feedback
- Focuses on safety aspects rather than taking candidates' expressed difficulties into account

Expert-trainer

But why ?

Discussion

- Firefighting = risks
  ↳ sergeants are responsible for their colleagues' life

"My greatest fear is graduating a sergeant who might be responsible for a colleague's death during an intervention"

Trainer:

- Controls debriefing

- Gives solutions to encountered problems

- Reminds rules and procedures to follow

▶ Tool to highlight key points and point out errors

Firefighting = dual relationship with risk (risk to oneself and risk inherent in the activity) → Applying rules = acting safely

Rogalski (2003)

Conclusion

Pedagogical effectiveness depends on its use

Focus on safety aspects **+** Little training of trainers **=** Theorical debriefings, dominated by the trainer

Learners' reflexivity
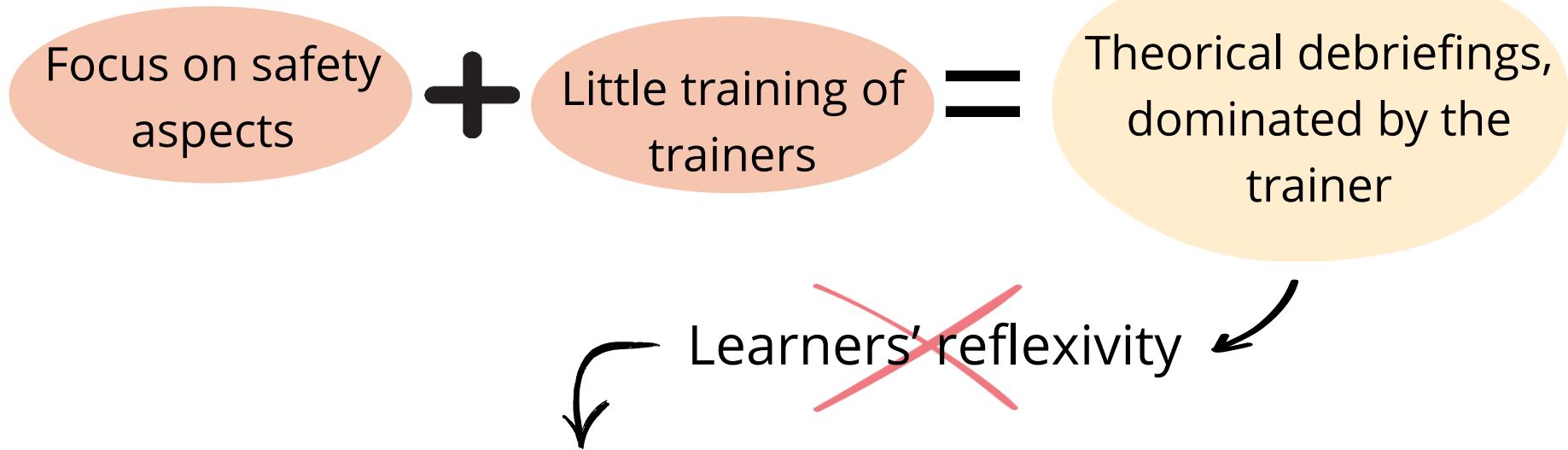
Skill needed to recognize when to apply, adapt or innovate rules based on situational demands

Conclusion

Training of trainers

- Lead debriefing

- Use technology in training

- Select proper video clips to analyze

- Confront trainers with their own activity
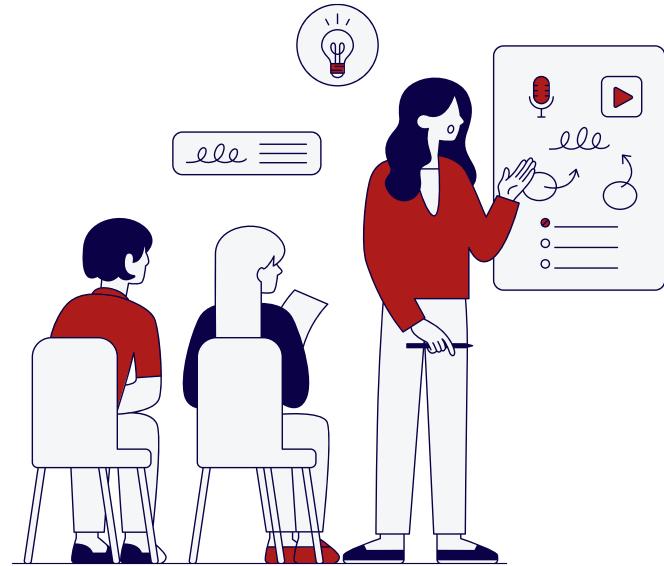
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