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Abstract

Didactic Concept

The essentials in a nutshell

This document is an abridged version of the didactic concept used in all training courses at the International Fire Academy.

International Fire Academy

Imprint

International Fire Academy, Industriezone Klus 17, 4710 Balsthal, Switzerland
✉ contact@ifa-swiss.ch | ✆ +41 62 386 11 11 | www.ifa-swiss.ch

Authors

Christian Brauner Head of the Didactics and Development Team

Urs Kummer CEO

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Used abbreviations

FF	Members of fire services, firefighters
FEDRO	Federal Road Office
DDT	Didactic and Development Team of the International Fire Academy
ESTT	Execution – Summary – Training – Test
FSCS	Fire Service Coordination Switzerland
RIM	Railway infrastructure manager
SFIK	Fire Service Inspector Conference
UTS	Underground Transport System

1. The vision of the International Fire Academy

The International Fire Academy formulates the following vision in its strategy: «We enable operationally relevant experience in such an intensive and sustainable manner that fire services can also successfully and safely overcome challenges in underground transport systems with confidence.»

From this, an overall training objective and sub-objectives are derived in the following chapter.

2. Objectives of the International Fire Academy training

The overarching objective describes how the training provided by the International Fire Academy should have a positive long-term impact on the operational activities of those trained.

The sub-objectives describe what is to be achieved in the individual training courses.

2.1. Overarching training objective: deployment with confidence

The overarching goal of the training courses offered by the International Fire Academy is that ‹Fire service members have the knowledge and skills to be able to successfully and safely handle assignments in underground transport systems as members of high responsibility teams›.

The key terms used are understood by the International Fire Academy as follows:

- The training courses at the International Fire Academy are specialised training courses for operations in underground transport systems (hereinafter UTS). Without exception, all participants are active firefighters and have successfully completed at least basic fire service training. Participants of the officer courses are further qualified as incident commanders. As a general rule, only members of fire services that are responsible for operations in UTS are trained. Firefighters can be deployed in UTS even if they have not undergone special training for operations in UTS. The training for UTS, therefore, does not serve to acquire qualifications that entitle working in this capacity. They serve to increase the safety and efficiency of firefighters when deployed in UTS.
- Members of fire services (hereinafter **FF** for firefighter) is the designation for people who actively serve in a public, private or military fire service.
- In this didactic concept, knowledge is understood as knowledge learners have acquired, e.g. terms to describe UTS.
- Skills are learned, i.e. not innate, abilities that contain a multitude of mechanisms that are organised through learning processes in such a way that desired goals can be achieved with maximum certainty (cf. Kiesel / Koch, 2012, p. 107). A distinction is made between technical and non-technical skills (see Chap. 2.2.3).
- High Responsibility Teams (hereinafter **HR Team**) are operational units that bear an exceptionally high level of responsibility, e.g. aircraft crews, operators of nuclear power plants or operational units of the medical service, the police, the military and the fire services. HR teams differ from teams in civil professions or, e.g. B. Sports teams by the following characteristics: The result of their actions are usually irreversible. Serious mistakes harm not only the team and the organisation but also third parties. The HR teams are regularly responsible for the lives of others. The respective situation cannot simply be aborted, and mostly pauses are not possible (cf. Hagemann, 2016, pp. 56–58.). With very rare exceptions, fire services always utilise teams, not individuals, to carry out their tasks.

- UTS are, for example, road tunnels, railway tunnels or underground car parks. From the fire services' point of view, their decisive feature are great penetration depths. The depth of penetration is the length of the route firefighters with breathing apparatus must cover from the safe area of a structure to their work area. In most buildings, the maximum penetration depth is around 40 meters, in railway tunnels up to several kilometres (see International Fire Academy, 2014, p. 30).
- Being able to cope with deployments with confidence is the attitude that FF should be able to develop through training at the International Fire Academy. Neither should they lightly underestimate the enormous risks of operations in UTS, nor should they go into operations laden with fear. The objective is that they develop the confidence, i.e. the «firm trust» (Dudenredaktion, 2006), to be able to cope with such assignments, which does not mean that they always succeed. This is because the destructive processes that fire services try to interrupt are complex and therefore fundamentally impossible to control safely. Dörner (1991, p. 60 f.) characterises complexity as the interconnectedness of a large number of variables whose interaction cannot be predicted, which is why any manipulation of a variable can lead to unexpected remote or side effects and thus also to failure.
- Safe is an operation when the firefighters, by their decisions and actions, do not cause any avoidable psychological or physical harm to themselves and third parties who are not yet affected.
- An operation is successful if the firefighters succeed in recognisably limiting or preventing damage to essential objects worthy of protection (people, animals, the environment, material assets). What success was achieved, however, is a question of perspective. If the fire service succeeds in extinguishing a vehicle fire quickly, this may not be a successful operation from the car owner's point of view, because his vehicle still resulted in a total loss. The tunnel operator, on the other hand, may judge the operation as successful because the rapid extinguishing of the fire prevented severe damage to the tunnel structure. The success of fire service interventions can rarely be measured precisely because it is usually not possible to determine precisely what damage would have occurred without any intervention by the fire service and what damage was prevented by its intervention.

2.2. Sub-objectives: Acquisition of specific knowledge and skills

In order to be able to achieve the overall objective, FF must acquire specific knowledge and skills. In the following, the purpose and characteristics of this knowledge and skills are first described, and then a distinction is made between general and UTS-specific knowledge and skills.

2.2.1. Purpose: Maximum acceleration of decisions and actions

Most fire service operations are under considerable time pressure. When people are threatened by smoke from fires, every next breath can be fatal, and every second really does count. Therefore, fire services try to accelerate perception, decision-making and communication processes as well as operational actions to the maximum. For this purpose, FF must acquire specific knowledge and skills.

Figure 1: Example of firefighter-specific skills: a firefighting attack

Figure 2: Example of fire service specific skills: situation assessment and tactical planning

2.2.2. Characteristics of knowledge and skills

Skills are a specific ability that can be determined in terms of content (cf. Böhm, 2005, p. 206) that is goal-oriented, highly efficient, associated with high performance and dependent on practice (cf. Kiesel / Koch 2012, p. 107).

In order to be able to use a skill, such as extinguishing a fire, in a targeted manner, FF need extensive knowledge of, for example, the dangers posed by fires, different types of fires and their progressions, as well as methods and tools for fighting fires.

High efficiency requires skills with which the objectives can be achieved with the least possible effort. This is necessary because, at least in the initial phase of an operation, there are often only limited resources available, e.g. too few staff.

Fire services achieve a high performance primarily through division of labour, for which processes are broken down into parallel sequences. An example: While the firefighting team extinguishes the burning vehicle in a road tunnel, the search & rescue team already starts searching for people in the smoke-filled tunnel section. Sequentialisation results in the typically very high personnel expenditure for fire service operations.

Skills are particularly useful when they are automated through repeated practice to such an extent that they can be performed largely without the conscious mind. This then allows them to concentrate on more difficult parts of the respective decision-making and operational processes (cf. Böhm 2005, p. 206). Fire services refer to this automation as routine formation.

2.2.3. General fire service specific skills

The operational activities of FF consist of a variety of technical and non-technical skills.

- Technical skills are, for example, the quick grasp of technical correlations, the application of techniques, e.g. extinguishing techniques, and the use of technical equipment such as a thermal imaging camera.
- Among the non-technical skills of emergency personnel, Hofinger (2016, pp. 41–47) includes e.g. interpersonal skills such as communication and leadership, cognitive skills such as situational awareness, planning and decision-making, and skills in dealing with personal resources such as stress and fatigue.

2.2.4. Definition of the required knowledge and skills

Which skills FF must acquire in concrete terms is defined in collective development and decision-making processes, which are organised in Switzerland by the Fire Service Coordination Switzerland (hereafter **FSCS**): Workgroups develop training principles that define the skills and the background knowledge required to understand them. These are examined by expert commissions, undergo consultation procedures and are finally approved by the Fire Service Inspector Conference (hereinafter **SFIC**). They then serve in the form of regulations, manuals or guidelines as a binding training basis and guideline for deployment. Examples are the regulations on basic knowledge «Reglement Basiswissen» and the regulations on operational command «Reglement Einsatzführung» (cf. FSCS 2015).

This principle can be found in all fire service systems. The only differences are terminology and procedural details. In Germany, for example, regulations are called «Dienstvorschriften», which are drawn up by committees of Working Group No. V of the Standing Conference of Ministers of the Interior. The fire service schools of the federal states then derive learning objectives lists from these service regulations.

All FF participating in training courses of the International Fire Academy have already completed comprehensive fire service training and have at least the required general knowledge and skills for the fire service.

2.2.5. UTS-specific knowledge and skills

Since not all fire services are designated for interventions in UTS, these are only dealt with marginally in the Basic Knowledge Regulations (cf. FSCS, 2015). In order to nevertheless be able to achieve the overall objective defined in section 2.1, the following sub-objectives should be achieved:

FF, who are intended for operations in UTS,

– acquire knowledge of the unique characteristics of UTS relevant to operations and

– acquire the necessary skills,
  – recognise the special hazards of UTS,
  – counter these hazards through tactical decisions and operational techniques as an HR team and
  – prepare themselves for operations in UTS.

3. Training content

The time available for fire service training is fundamentally tightly limited. This applies in particular to Swiss militia fire services whose members perform their service on a part-time basis and must be excused by their employers for training courses. For this reason alone, the training content must be limited to the quantity actually required (cf. section 2.2.4). Therefore, an essential task of the International Fire Academy is to identify and determine which training content is indispensable for preparing FF for operations in UTS.

The following describes how UTS-specific training needs are identified and documented.

3.1. Identify training requirements

Particularly with the example of the major fires in the Mont Blanc Tunnel (1999), Tauern Tunnel (1999) and Gotthard Road Tunnel (2001), the fire services developed an initially diffuse awareness that the knowledge and skills acquired in regular training were insufficient to handle fire operations in UTS safely, successfully and with confidence in the sense of the overarching training objective (Chapter 2).

For this reason, the Federal Roads Office (hereafter **FEDRO**) commissioned the International Fire Academy in 2005 to develop a firefighting procedure for fire services for firefighting operations in road tunnels. In 2014, the Swiss railway infrastructure managers (hereinafter referred to as RIM) also commissioned the creation of a procedure for the operating area of railway tunnels in the same way. In 2005, the Didactics and Development Team (hereafter **DDT**) was established, consisting of experienced fire service officers and experts in the construction and operation of UTS, in addition to the staff of the International Fire Academy.

3.2. Method of difference compilation

A central principle of fire service training is to always «build on what is known» (cf. FSCS 2019, p. 04/05). Following this principle, the DDT identified the differences between UTS operations and ordinary operations, under which all those operations were subsumed that fire services are frequently confronted with.

One concrete example: According to the standing mandate of fire services, the tactics for building fires is usually to rescue first and then extinguish. In tunnels, however, rescuing people from the smoke can be very time-consuming if long stretches of tunnel are entirely filled with smoke, and the firefighters can only move slowly due to poor visibility. Therefore, in many cases it is more efficient to extinguish the fire as a priority in order to stop the smoke production and thus improve the conditions for search and rescue. This results in the tactical principle «extinguish in order to rescue». This means: In both cases, measures for extinguishing and search & rescue are carried out, using skills already mastered. The major difference lies in the order in which these skills are applied.

In some cases, however, skills that have already been mastered need to be optimised. In building fires, fire services usually search only small rooms of a few square metres. The usual procedure is to scan the floor with the feet and shelves, beds, etc. with the hands in search for people and animals. Using this technique to search hundreds of square metres of a roadway in a road tunnel would be extremely strenuous and hardly possible. Therefore, a new technique was developed, which is the use of search sticks, and for the FF this means that they have to acquire a new skill – using search sticks.

With the method of difference compilation, i.e. the question of how tunnel operations differ from operations in buildings, two things were achieved: On the one hand, knowledge and skills already mastered are built upon as far as possible. On the other hand, new skills are offered for those tasks for which the existing and familiar are not sufficient. This reduces the new training content to the knowledge and skills that are actually required.

3.3. Documented Tunnel Firefighting Procedure

The entirety of all the specific knowledge and skills required for operations in UTS was summarised by the DDT to the firefighting procedures for road and railway tunnels and approved by the SFIK as a general training basis for Swiss fire services after validation by the responsible technical commissions of the FSCS. Both procedures were documented in the textbooks «Firefighting Operations in Railway Tunnels» and «Firefighting Operations in Road Tunnels». These textbooks are divided into

- Introduction to the subject,
- Structural and operational theory,
- Hazard theory,
- Operation tactics,
- Operation techniques and
- Operational preparation.

The International Fire Academy develops its teaching material based on these reference books.

4. Didactic method: Enabling experience gain

The International Fire Academy's training courses are divided into theory and practice:

- In the theory training theoretical knowledge relevant to operations in UTS is presented in the form of instructional talks, lectures, instructional posters and educational trails through the training tunnel facilities.
- In the practical training, which takes up most of the training time, special techniques and procedures for UTS operations are shown and practised.

The desired confidence (see section 2.1), however, the firefighters can only gain by applying knowledge and skills and gaining their own experience of them. That is why the International Fire Academy practices experiential learning. We understand this to mean giving learners the opportunity to gain experience in dealing with operational tasks in UTS.

The epistemological foundations of this didactic approach, the model of experience-based learning and the teaching method of simulation are explained subsequently.

4.1. Epistemological foundations: constructivism

The International Fire Academy orients itself in the selection of its didactic methods on the epistemological position of constructivism. This replaces «the traditional epistemological question of contents or objects of perception with the question of how and focuses on the cognitive process, its effect and results» (Schmidt, 1987, p. 13; emphasis in original). The starting point of constructivism is the scientific-mathematical realisation that human perception does not take place in the sense organs but in the brain (cf. Schmidt, 1987, pp. 14–15; also Maturana/Varela, 1987, 178–179). What people perceive as reality is «not an image, but a representation of what takes place in reality» (Merten, 2007, p. 98). The stimulation of our senses (e.g. the visual cells of the eye) is «necessary but not sufficient for perception» (von Foerster, 1993, p. 275). Only the brain calculates (individual) descriptions of realities from the electrical impulses of the optic nerves (cf. von Foerster, 1993, p. 32 ff.). In the process, the brain assigns meanings to sensations according to innate or individually developed criteria (cf. Roth, 1987, p. 235). «The reality in which I live is a construct of the brain» (Roth, 1997 p. 21).

However, this does not mean arbitrariness (cf. e.g. Kruse/Stadler, 1994, p. 40, or von Foerster, 1993, p. 47). On the one hand, precisely those constructions of reality that have proven themselves in life practice are «to a large extent evolutionary in origin and thus predetermined in the neuronal structure of the brain» (Kruse/Stadler, ibid.), therefore innate. On the other hand, the freedom of construction that remains finds its limits where one individual reality meets another individual reality, and each claims to be the only true one. Then the conflicting constructions have to be coordinated (von Foerster, 1993, p. 49). Simon (2009, p. 71): «The radical constructivist position does not consider that it is arbitrary which worldview is constructed. [...] Where the observer encounters objects, he usually cannot avoid adapting his world view». Constructivism also allows for an interpersonal consensus on which ideas about the world are wrong. Nevertheless, it also allows that different world models are true in the sense that they help to «find a way through the maze of reality».

The practical consequence of the constructivist position is that knowledge and experience cannot be transferred from teacher to learner in the same way that, for example, a data file is transferred from one computer to another. Teachers can present, show or demonstrate something. However, learners cannot simply copy this; they have to construct or at least reconstruct their own picture of reality via complex neurological processes.

Starting from this position, the instructors of the International Fire Academy do not take on the "classic role of lecturing, controlling, knowing better", but act as "multidisciplinarians, impulse-givers, planners, helpers, advisors, facilitators, visionaries, evaluators and much more" (Reich, p. 25). This shifts the focus from teaching to learning and emphasises the «self-activity in learning [...], i.e. the active role of the learner» (Hippel et al. 2009, p. 43).

4.2. Learning model: Experiential learning

Experiences can be understood as personal episodes stored in the brain in which sensory perceptions are linked to factual prior knowledge and experiences, goals, options, emotions, decisions and actions (cf. Kluge, 2016, pp. 111–117). For example, during a firefighting operation in a tunnel, firefighters can experience that it is extremely strenuous for two people to carry an unconscious person over a distance of 100 metres to the nearest emergency exit. They can learn from this experience by coming up with a different means of transport and testing it, for example, using a basket stretcher with wheels. If this technique proves to be less strenuous, they have learned to save people with less effort and faster than is possible with the old method.

Such experiences can be verbalised and passed on to others as an instruction: ‹Take a basket stretcher with wheels in the tunnel!› This fragment of knowledge can be learned by heart and even tested, but as purely theoretical knowledge it is «more or less useless» for the acquisition of skills (Kluge, 2016, p. 112). Those who have never tried to carry a person over a long distance are less able to deal with this knowledge than those who have already experienced such a rescue situation and see the stretcher with the wheels as a solution to the problem that they want to use. The likelihood that what is to be learned can be recalled or applied is greater the stronger and more varied it is connected to a «personally significant and self-experienced episode» (Kluge, 2016, p. 112, emphasis by the authors).

Learning from experience thus consists of reflecting on the experience made, deriving abstract knowledge and schemata from it, actively applying these to the same or similar situations, thereby making new experiences, reflecting on these again and so on, as shown in Figure 3.

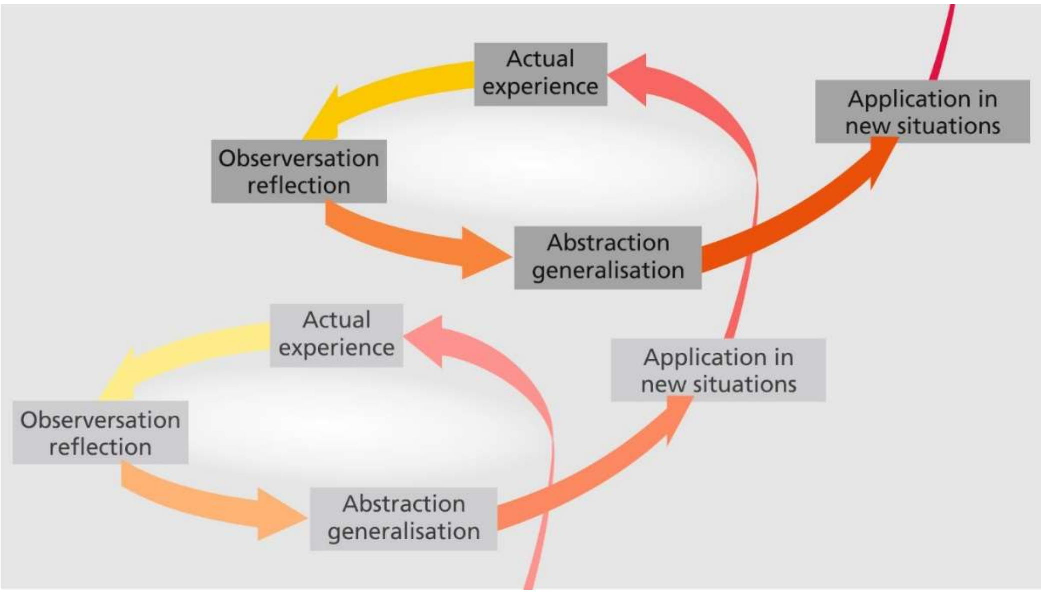

Figure 3: Learning cycle of experiential learning (based on Kolb, 2015, p. 33 f.)

With each further learning cycle, there can be an increase in experience and – as a result of reflection – in knowledge. In this respect, the aim should be to deploy firefighters as often as possible. The more extensive the operational experience of a FF, the more likely it is that he or she will be able to cope with even the most difficult tasks.

However, the striving to gain operational experience, to increase the treasure trove of experience, as the everyday language puts it, is opposed by two obstacles. Firstly, the frequency of deployment is rather low for many FF. This is especially true for rare incidents such as train fires in railway tunnels, which only very few FF have ever experienced in concrete terms. Secondly, the experience gathering of many situations can be associated with high risks to the firefighters themselves or for third parties. The experience of not being able to carry people long distances can be correlated with a person not being rescued or the fire-fighters overburdening themselves.

The practical solution to this problem is to simulate operational situations.

4.3. The teaching method of simulation

«Simulation simply means imitating, feigning or quite simply: pretending. [...] The purpose of a simulation is basically to create a fictitious situation in which real action is then taken.» (Brauner/Stadler, 1998, p. 21). Simulation is a particularly valuable tool for training HR teams because it can be used to create learning environments that are very close to the reality of an assignment but are still safe for learners (cf. Regener/Hackstein 2016, p. 17).

The following shows how simulations ‹work› from the perspective of cognitive science and psychology. Using the concepts of training reality and operational reality, the benefits of simulations and how the International Fire Academy uses simulations for training are discussed.

4.3.1. Interpretation of reality

Simulation is possible because people do not react to reality but to their interpretation of reality and their emotional evaluation of it. The principle is shown in Figure 4 in a highly simplified schematic form.

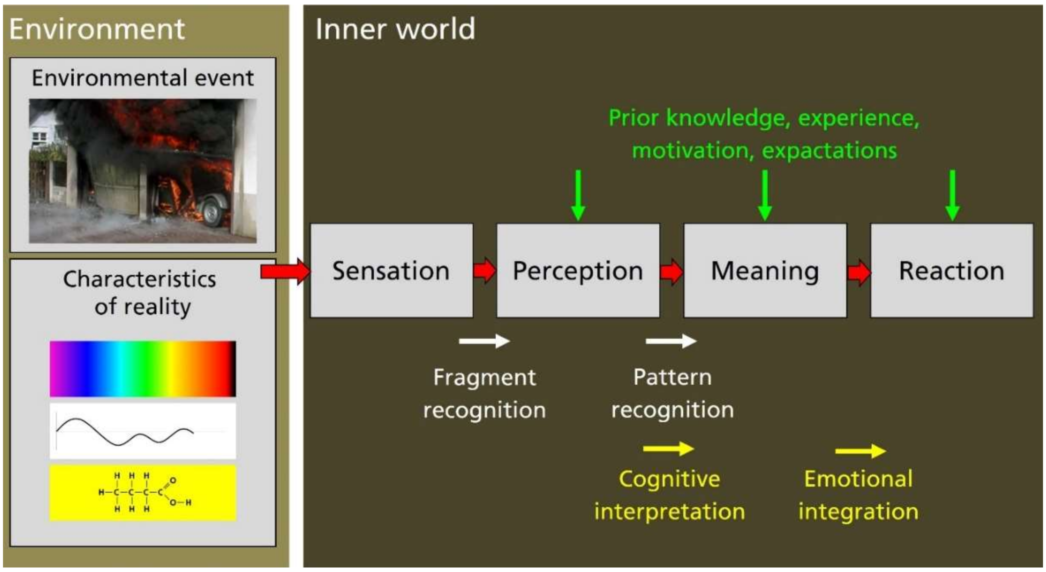

Figure 4: Reaction to constructed realities (after Igl/Mitchell/Everly 1998, pp. 32–39; Zimbardo, 1992, p. 140 f.; von Foerster, p. 25–71).

An event in the environment emits electromagnetic waves (light, heat), acoustic vibrations, molecules of odorous substances, pressure waves, etc., which we perceive with our senses. In these sensations, the brain recognises fragments that it assembles into a familiar or newly recognised pattern based on prior knowledge, experiences, motivations and expectations. This cognitive interpretation is followed by emotional integration, in which a subjective meaning is then assigned to the known pattern. An experienced FF could assess the recognised situation as being well under control and start extinguishing the fire. A layperson, on the other hand, may feel great fear and react by fleeing.

Since people do not deal with the real world that exists outside of them, but with the image of this world that they have constructed, AdF do not necessarily have to be exposed to real operational situations in order to learn. It is sufficient if they construct a reality for themselves in which they can acquire knowledge and skills and gain experience through their practical application.

4.3.2. Training reality vs operational reality

The crucial question is then how accurately the exercise reality of the simulation must correspond to the operational reality of the emergency. Complete congruence is prohibited for ethical reasons alone. Every fire service operation is associated with a more or less significant risk of harm to third parties or to the firefighters themselves. In this case, it would no longer be justifiable for firefighters to run faster than they would in a drill, stumble and injure themselves in the assumption that they were actually trying to save lives.

The reality of the training should therefore not be exactly the same as the reality of the operation. Nevertheless, the experience gained in the simulated situation should be transferable to real operational situations. This is achieved by confronting the learners with characteristic features and conditions of the operational reality, as far as this does not expose them to uncontrollable risks.

An example: Real fire smoke has two essential properties for firefighters. It is highly toxic and obscures vision. If trainees were exposed to real smoke, even simple mistakes could have fatal consequences. Therefore, instead of real smoke, theatrical smoke is usually used, which considerably impairs visibility but is not harmful to health. It is true that the training reality experienced in this way does not correspond exactly to the potential realities of operations. In the whitish theatrical smoke you can always see ‹still a little bit›. In the real smoke, it is sometimes not even possible to see one's own hand in front of the facepiece of a breathing apparatus. But: The practice reality at least offers learners the opportunity to experience the phenomenon of losing sight and, for example, to develop or train the skill of perceiving the immediate environment by means of touch and hearing alone and to recognise whether the object just touched is a rubber tyre or a human body. This task maybe even more difficult to accomplish in operation than in mere training. But it will be easier to cope with because of the training experience in the field than without any experience of such situations.

4.3.3. Shared mental models for teams

Most of the fire service's operational situations can only be handled as a team. Therefore, the FF not only have to develop individual skills. They also need to develop the skill of performing their tasks together with others, e.g. searching vehicles in a smoke-filled road tunnel with five others. For this, they need a comparison of their individual constructions of reality in the form of a shared mental model. The more the individual team members agree on how to assess the current situation, what goals are being pursued, what options are available and how to proceed in concrete terms, the better they can coordinate with each other (cf. Hagemann/ Hofinger, 2016, p. 101).

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4.3.4. Joint reflection and feedback

The development of common mental models requires intensive communication, for which there is usually no time during operations. Therefore, simulations should also be used to provide HR teams with a shared experience in complex operational drills, which they can then reflect on together. The learning effect is particularly powerful when in joint reflection errors are not only named but also their causes are jointly identified according to the principle of "deeper learning" or "double-loop learning" (Rall, 2016. p. 117) in order to be able to eliminate these causes.

This means that feedback is of central importance. The International Fire Academy follows the ESTT model, which is widely used in Switzerland. ESTT stands for ‹Execution – Summary – Training – Test›. This means: First, there is practical work (‹Excecution›). Then this execution is reflected on together (‹Summary›). This is followed by the ‹Training› through instruction, demonstration, explanation. And finally, in a ‹Test› it is applied again in practice. The principle corresponds to that in section 4.2 illustrated the learning cycle of experience-based learning.

For the ‹Summary›, the International Fire Academy has developed a special feedback culture characterised by three features.

- Instructors should not overload the joint reflection; therefore, no more than three points should be addressed at a time.
- Mistakes are to be named concretely and it is to be clarified together how things can be done better.
- And this must also be justified or explained.

Another important task of the debriefing is the deconstruction of the training reality in order to avoid wrong conclusions. An example: For safety reasons, the fire simulation facilities at the International Fire Academy are operated with gas. The extinguishing success is shown by the instructors remotely throttling the gas supply and the fire going out. From this, a learner might conclude that gas fires can be extinguished with water. But that is precisely not the case. Gas fires must not be fought with water because the gas would continue to leak out even if the flames were extinguished, and this could lead to an explosion.

4.3.5. Principles of simulation

In this context, the following principles apply to simulations by the International Fire Academy:

- Simulations provide learners with relevant characteristics of operations in UTS from which they can construct training realities that enable them to gain their own experiences that they can then apply to the realities of operations.
- Simulation technology and scenarios are designed so that simple mistakes cannot have fatal consequences. In the event of malfunctions or accidents, all simulation systems can be brought to a non-hazardous state within a short time.

- Simulations consist of the combination of UTS-specific physical operating conditions and fire scenarios.
  - For the simulation of physical operating conditions the International Fire Academy develops and creates special training facilities that realistically reproduce the following operating conditions:
    - spatial dimensions of road and rail tunnels, especially long distances,

– special features of safety features, e.g. sliding escape doors,
– poor visual conditions,
– a large variety of searchable road and rail vehicles,
– flame appearance and heat by means of gas-powered fire simulation systems on the exterior and interior of road and rail vehicles,
– airflow conditions,
– noise and sound,
– the rescue of persons from vehicles and tunnel tubes, for which training manikins and participants are used, and
– spatial distances to simulate difficult communication conditions.

– The operational scenarios are derived from real-life operational experience and are designed in such a way that they are
  – can basically be mastered by the learners,
  – challenge learners and
  – give learners the opportunity to experience their own performance limits.

– The International Fire Academy does not conduct covert simulations; participants are always aware that it is ‹just› a practice. The psychological pressure of operational reality and the associated fear of failure or of being injured is not to be recreated.
– The simulations also serve to make mistakes and learn from them; therefore, mistakes are explicitly allowed.
– The experiences made in the training reality are always to be reflected on together; only in this fashion can the desired learning effects arise, from which the learners can derive confidence for their operational activities.

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