

# What and how to train for strategic crisis management: A systematic literature review

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## Abstract

This article provides a systematic literature review of existing strategic crisis management training research. The review explores practices on which strategic crisis management skills to prioritize and how to train these skills to be prepared when a crisis strikes. Our research question was: How is strategic crisis management trained, and is there a best practice? In all, we identified 538 articles from 3 databases and read the abstracts. From this, we selected 41 articles based on the defined inclusion criteria and read them as a whole. In the end, eight articles were a part of this analysis. A thematic analysis based on the categorization of repetitions of concepts was used to analyse the data. The analysis resulted in two main categories: *what to train*, which focuses on the outcome and skills, and *how to train*, which focuses on the process and pedagogy. The outcome (what to train) categories were (1) related to working together, (2) related to understanding the situation, (3) related to making adequate decisions in complex contexts, and (4) related to practicalities. The process (how to train) categories were (1) training methods and (2) learning theories. A model considering three main strategic crisis management training approaches, outcome-focused training, process-focused training, and learning-focused training, was developed. The latter was concluded to be the desired option, as it is a balanced approach of both outcome and process focus.

## KEYWORDS

crisis management, education, safety management, teaching, training

## 1 | INTRODUCTION

In general, crisis management is considered to be critical decision-making during high uncertainty (Kruke, 2012). Further, it is characterized by coordinating often scarce resources in a complex context (Niemic et al., 2021). Trust and communication are viewed as important aspects of crisis management (Badu et al., 2023).

However, on a more specific level, crisis management is a term without a normative definition, and its content varies. Often,

crisis management refers to handling an organizational crisis or financial crisis (Mitroff & Kilmann, 1984; Richardson, 1994) or larger disasters affecting societies (Larsson et al., 2015). It has a basis in areas such as public relations education (Coombs & Holladay, 2001), medical and health education (e.g., Doumouras et al., 2012), and interprofessional education and training for cooperation between organizations and emergency and municipal agencies (Bakken et al., 2022; Sætren et al., 2022). The concept of crisis management is not standardized in terms of content and

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definition. Thus, it is essential to define the concept and explore teaching and training within it.

In this study, we look into strategic crisis management, which is an overarching coordinating role for employees who have everyday tasks other than handling crises. This means that we are not exploring operational tasks or procedures but rather organization, coordination, and collaboration on a strategic level in a fast-evolving crisis.

Our research question was: How is strategic crisis management trained, and is there a best practice?

To investigate this question, we will present a theoretical framework consisting of a definition and the similarities and differences between crisis management and safety management before presenting the methodology and results of our study.

## 2 | THEORETICAL FRAMEWORK

### 2.1 | Crisis management

When referring to strategic crisis management, we define the concept as *the role of an organisational team that gathers during a specific crisis for strategic responsibility, coordination, and decision-making*. The team members are often from different parts of an organization, and their everyday roles in the organization vary. In addition, to ensure the effectiveness of internal collaboration and action, they will need to collaborate with relevant agencies and organizations such as police, healthcare personnel and the fire department, as well as communicate with external stakeholders, often through the media. The team members gather for strategic decision-making when a crisis strikes, which is seldom part of their main everyday work routine or a part of their educational background.

A crisis could be defined as 'A serious threat to the basic structures or the fundamental values and norms of a social system, which—under time pressure and high uncertain circumstances—necessitates making critical decisions' (Rosenthal et al., 1989, p. 10). The handling of the crisis is crucial for the system to return to normal functioning as soon as possible. There are, however, many different approaches describing the concept of a crisis (Björck, 2016; Boin et al., 2020; Gundel, 2005; Hwang & Lichtenthal, 2000; Milburn et al., 1983; Pauchant & Mitroff, 1990; Quarantelli, 1993). Gundel (2005) uses a typology that discriminates between conventional, intractable, unexpected and fundamental crises. Conventional crises are easy to predict and influence, and intractable crises are hard to influence and easy to predict. Unexpected crises are easy to influence and hard to predict, and finally, fundamental crises are hard to influence and predict. As there are different crises, there are also different ways of teaching and training to manage them and different skills to train for in this regard (Lalonde & Roux-Dufort, 2012).

Another well-established typology, presented by 't Hart and Boin (2001), is classified by how the crisis develops and terminates. The different types of crises here are fast-burning, cathartic, long-shadow and slow-burning. The fast-burning crisis is short, sharp and

decisive and could be small, like a road accident, or large, involving many victims in a highly populated area, such as a terrorist attack or an avalanche. A cathartic crisis hits fast but is dependent on a longer beginning and takes longer to end; for example, a building conflict that ends in violence. A long-shadow crisis occurs rather quickly, but its termination is slow. This often involves, for instance, political or institutional crises. The last type of crisis is the slow-burning crisis. This crisis takes very long to form. Due to the slow changes, it is challenging for humans to grasp its potential outcome fully, and it is difficult to know how to handle it due to an uncertain awareness of the situation (Sætren et al., 2023). An example of the latter is the climate crisis.

#### 2.1.1 | Levels of crisis management

Crisis management also exists on different levels. Most often, three levels are described. Level 1 (the lowest level) takes place at the incident scene. Level 2 coordinates at the scene or in close proximity, and Level 3 is situated further away for an overarching responsibility and to coordinate with other organizations. Often, these three levels are called tactical, operational and strategic. However, neither the terms nor their contents are coherent across different sectors. Other names for the three levels are bronze, silver and gold, or first, second and third. For instance, Ingrassia et al. (2014) refer to the first level as bronze, the second as silver and the third as gold; this terminology is quite common in the health industry. In addition, there is also a fourth level, the governmental political level, but that is seldom a direct part of crisis management. A bigger challenge is that the levels are used differently in different contexts, so the same level may be referred to as tactical or operational, depending on the context and sector. In the Norwegian police force's national-level crisis preparedness system, tactical refers to the police districts, operational to the police directorate and strategic to the Ministry of Justice. The same terminology is used differently within the same police force for police district levels, where tactical is used for Level 1 (on the scene), operational for Level 2 and strategic for Level 3 (Police Directorate [PD], 2020). In the Norwegian Armed Forces, the (military) strategic level is the national level where military strategic goals are formulated based on national policy; the operational level realizes military strategic goals through military operations, while the tactical level comprises the military units conducting engagements and actions to achieve military goals set by the operational level (Norwegian Armed Forces, 2019, pp. 11–12). This aligns with NATO terminology and levels of command (NATO, 2017, 2023, pp. 1–11).

In this paper, we focus on Level 3, which we refer to as coordinated strategic crisis management from an overarching level when an unexpected crisis strikes (Gundel, 2005); the crisis must also be fast-burning (Boin et al., 2020) and require a crisis management team to be established. The crisis we explore could thus strike any organization or society, such as municipalities, universities and

chemical plants. Further, we define crisis management as being able to manage operations when a crisis strikes (Cantu et al., 2020; Johnstone & Turale, 2014; Jong et al., 2016; Veenema et al., 2019).

## 2.2 | Safety management

Safety preparedness and a well-functioning safety culture are crucial for a crisis to be strategically handled well. By building a safety culture and resilience, unwanted incidents and accidents are less likely to occur (Weick & Sutcliffe, 2015). There are three fundamental views on safety: safety I, safety II (Hollnagel, 2014) and safety III (Leveson, 2020). Further, theoretical frameworks for safety management are most often linked to theories such as high-reliability organizations (HROs) (Weick & Sutcliffe, 2015), normal accident theory (NAT) (Perrow, 1999) and resilience engineering (RE) (e.g., Hollnagel, 2009).

Safety I, II and III describe three different perspectives on how to anticipate safety. Safety I represents the traditional approach to safety, focusing on the absence of negative events and errors. This view aims to prevent accidents through rules, procedures and barriers. The focus is 'what could go wrong'. Safety II recognizes that complexity and variability are inherent in complex systems. This view emphasizes the adaptive capacity of systems, organizations, groups and individuals to respond and learn from unexpected events, focusing on resilience, flexibility and the ability to recover from failures (Hollnagel, 2014). The focus is 'what is done right'. Safety III expands this perspective further. This view emphasizes the need to consider the larger sociotechnical system, including societal and organizational factors, and to address the underlying systemic causes of accidents (Leveson, 2020). The focus is 'how does the system work best for humans?'

Weick and Sutcliffe's (2015) concept of HROs refers to organizations operating in complex, high-risk environments while maintaining a consistently high level of safety and reliability. HROs are characterized by their ability to manage unexpected events effectively and prevent catastrophic failures. The core principles of HROs include preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, commitment to resilience and deference to expertise. These principles enable HROs to proactively identify potential risks, learn from near-misses and accidents, and continuously improve their processes and systems. HROs emphasize a culture of mindfulness, where individuals at all levels are encouraged to be alert, proactive and receptive to information that could indicate a potential failure or deviation from normal operations. They foster open communication, promote cross-functional collaboration and value the expertise and input of all members.

RE (e.g., Hollnagel, 2009) is an approach to managing complex systems that focuses on the ability to adapt and thrive in the face of unexpected events and disturbances. It emphasizes understanding how systems respond to and recover from disruptions in addition to preventing failures. RE is built upon four cornerstones:

(1) Anticipation: The ability to foresee potential risks and prepare for them proactively. (2) Monitoring: Continuous system performance monitoring to detect and respond to emerging issues and changing conditions. (3) Response: The capability to respond effectively and swiftly to disruptions, make necessary adjustments and implement resilient strategies. (4) Learning: Continuously learning from successes and failures to improve system performance and enhance resilience over time. By incorporating these cornerstones, organizations can cultivate a proactive and adaptive mindset that helps them better anticipate, respond to, and recover from disruptions, ensuring system robustness and long-term viability (Hollnagel, 2009).

NAT (Perrow, 1999) suggests that accidents in complex systems are inevitable and inherent due to system complexity and interactions. According to the theory, accidents occur because complex systems have multiple interacting components that are tightly coupled, meaning that actions in one part of the system can have unforeseen and unintended consequences in other parts. Perrow (1999) argues that accidents are not the result of human error or individual incompetence but are a natural consequence of complex systems operating under normal conditions. The theory highlights the importance of understanding system complexity, improving system design and developing strategies to mitigate the impact of accidents rather than solely focusing on preventing them.

## 2.3 | Comparing crisis management and safety management

NAT is a deterministic theory that addresses the thought that accidents will occur, while HRO and RE are linked to the idea that accidents and unwanted incidents can possibly be avoided. Both HRO and RE are concerned with building a strong safety culture, foreseeing unwanted incidents through concrete actions and avoiding the unexpected. Further, both theories touch upon strategies on how to resume normality after an incident, which lies within the field of crisis management (Sætren, 2016). This is in line with the intertwined aspects of the two academic fields, as crisis management literature often discusses how to avoid crisis, which is within the concept of safety management. Thus, there is little consensus on how crisis management literature is divided from safety management literature. We would like to present a model of the relationship between crisis management and safety management in theory and practice to concretize what we are exploring further in this paper. The concepts of safety management and crisis management are interlinked and have similar training, but they differ in terms of theoretical framework and approach. Safety management literature (e.g., Hollnagel, 2009; Perrow, 1999; Weick & Sutcliffe, 2015) focuses mainly on how to avoid crises, and crisis management literature focuses on how to operate when a crisis strikes. The two fields are, of course, intertwined but are also rather different, and different skills are necessary for the two. For instance, predicting potential crises, working together on creating psychological safety (Edmondson, 1999), and being aware of contextual factors, in the

long run, requires skills besides making decisions quickly in a complex, dangerous and indefinite context. However, making good decisions and gaining sufficient situational awareness (SA) in a crisis, establishing a long-term relationship with psychological safety and trust, and thoroughly understanding the context in which the crisis occurred need long-term safety management work. Thus, we would like to present a model to visualize how we view crisis management, the focus of this paper, and how it differs from safety management (see Figure 1). This focuses on the crisis management part of the model, including training for when an event occurs.

## 2.4 | Training for strategically managing an unexpected disaster

Effective strategic management of complex crises requires coordinated efforts. For this reason, it is important to train for a crisis. As one never knows when a crisis will strike, training and picturing different scenarios makes one better prepared and more resilient in crisis handling (Kruke, 2015; Weick & Sutcliffe, 2015), and crisis training is shown to have an effect on strategic crisis management when an actual crisis occurs (Larsson et al., 2015). However, training for managing a crisis when it is not a part of one's everyday job tasks is challenging. Thus, such training requires a pedagogical assessment of appropriate methods based on which skills are expected learning outcomes.

### 2.4.1 | What to train—Outcome

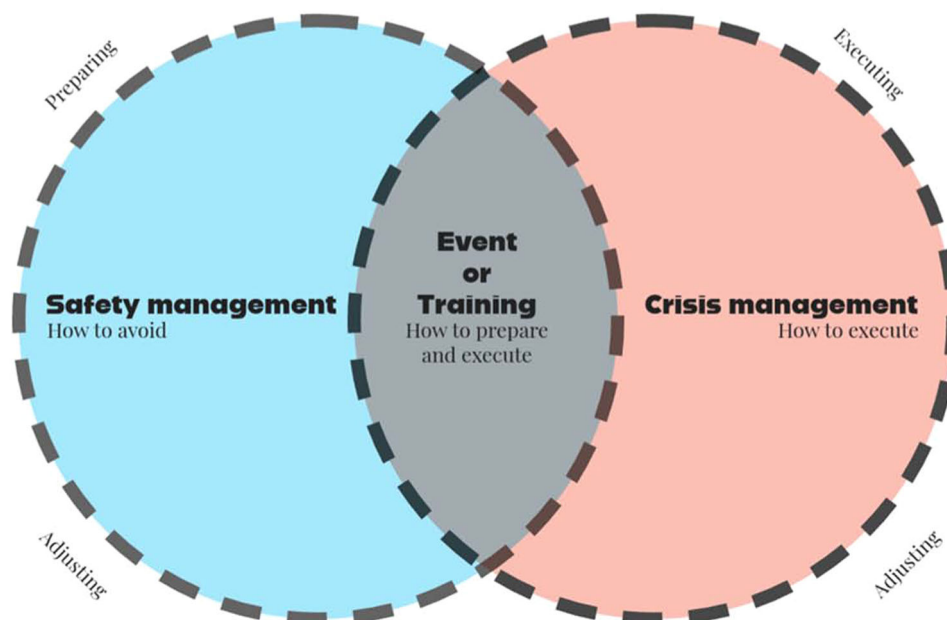
Crisis management is about making good decisions in a stressful and unanticipated environment with scarce resources, and training

should be relevant for this. Decision-making (Edwards, 1954; Rasmussen, 1983) is a natural skill to train, but additionally, the factors supporting optimal decision-making also need attention. Interpersonal and collaborative skills are critical to communicate and gain essential information (Flin et al., 2008). In addition, staying calm, managing complexity and gaining sufficient SA would be beneficial for coordination (Endsley, 1995; Stanton, 2016). Further, creativity to problem-solve when systems are not working and, therefore, local knowledge and know-how in regard to the context would be important in a crisis management team (Weick & Sutcliffe, 2015).

Some important skills relate only to crisis management rather than the safety management phase, such as making decisions under stress in a complex context. This includes gaining a good awareness of the situation which consists of perceiving and understanding the situation in addition to being able to predict what future scenarios could be (Endsley, 1995). Good situation awareness relies on good communication including being clear and concise (Flin et al., 2008). However, some of the skills necessary to train for this are established in the safety management phase, including a well-established safety culture created by cognitive techniques fostering cooperation skills (Hollnagel, 2009; Weick & Sutcliffe, 2015). These skills include interpersonal relations and psychological safety (Edmondson, 1999).

### 2.4.2 | How to train—Process

Kolb's (1984, 2014) experiential learning theory (ELT) is a comprehensive model that explains how individuals learn from experience. According to Kolb (1984, 2014), learning is a cyclical process that involves four distinct stages: concrete experience,



**FIGURE 1** An illustration of safety management versus crisis management.

reflective observation, abstract conceptualization and active experimentation. Each stage plays a critical role in the learning process, and individuals tend to favour one or two of these learning modes over others.

The first stage of the ELT is concrete experience, which involves direct participation in a new experience or activity. This could be anything from attending a lecture or workshop to trying a new sport or hobby. During this stage, individuals become actively involved in the experience and collect information through their senses. The second stage of the ELT is reflective observation, which involves reflecting on the experience and observing the events and people involved. During this stage, individuals analyse the experience, considering what happened, why it happened and what could be done differently in the future. The third stage of the ELT is abstract conceptualization, which involves creating meaning from the experience by connecting it to existing knowledge or theories. During this stage, individuals make sense of the experience by drawing on their knowledge, experiences and beliefs. The final stage of the ELT is active experimentation, which involves applying what was learned during the previous stages to new situations. During this stage, individuals test new ideas or approaches and evaluate the results.

Kolb also identified four learning styles that individuals tend to favour: diverging, assimilating, converging and accommodating. Divergers favour concrete experience and reflective observation, whereas assimilators favour abstract conceptualization and reflective observation. Convergents favour abstract conceptualization and active experimentation, while accommodators favour concrete experience and active experimentation. Overall, Kolb's ELT provides a useful framework for understanding how individuals learn from experience and how different learning styles can affect the learning process. By understanding the different stages and modes of learning, educators and learners can develop strategies that facilitate learning and enhance the educational experience.

In addition to knowing how people learn, the equipment used for crisis management training is also relevant regarding how to train. Often, crisis management training is either discussion-based or operation-based. Discussion-based exercises are often called tabletops and involve group discussions. These are highly relevant for strategic crisis management training, as the task of such management is to coordinate and collaborate, which is very similar to a tabletop exercise. High et al. (2010) found that discussion and networking, a natural engagement in such exercises, were some of the most valued outcomes, which are vital for successful intra- and interorganizational cooperation during an actual crisis. Operational-based exercises are often either drills to test specific operations and procedures or functional ones that focus on testing collaboration, coordination, command and control in regard to multiagency coordination centres. It is the latter sort of exercise we are looking into in this research. Such exercises could either be full-scale or simulated. A full-scale exercise is much more resource-consuming than a simulated exercise. The tools to train simulated exercises are often virtual reality (VR) (Conges et al., 2020; Khanal et al., 2022; Kwok et al., 2019), serious gaming and computer-based training (Sætren et al., 2022).

### 3 | METHOD

A qualitative approach to a systematic literature review was chosen for this study (Okoli, 2015). A thematic analysis based on repetitions (Ryan & Bernard, 2003) was used to analyse the data.

#### 3.1 | Systematic literature review

Basing the systematic literature review on Okoli's (2015) eight steps, we (1) identified the purpose and research question, (2) agreed on procedures, (3) created inclusion and exclusion criteria, (4) searched for literature, (5) extracted data through reading abstracts and selected full papers, (6) appraised the quality of the full papers and selected those to be included, (7) did the thematic analysis and (8) wrote the review.

The search was conducted in March–April 2023. Our search terms were 'crisis management' and 'training' minus 'surgery' and 'nursing'. The broad search was chosen as few articles covered the topic of strategic-level crisis management. 'Nursing' and 'surgery' indicated articles that only addressed the tactical level; these articles were removed. The databases were chosen due to their relevance to the topic. There were different search possibilities for the different databases, and thus our searches were:

- ProQuest: all in the abstract
- Scopus: title, abstract, keywords
- Google Scholar: all in the title.

The inclusion criteria were that the article:

- (1) was concerned with training and teaching for conducting strategic crisis management for fast-burning crises,
- (2) was in the English or a Scandinavian language,
- (3) was an empirical research paper,
- (4) was scientifically peer-reviewed, and
- (5) was published during the period 2013–2023.

Both peer-reviewed journal papers and peer-reviewed conference proceedings were included. In all, 148 articles were identified from ProQuest, 198 from Scopus and 192 from Google Scholar. A total of 538 articles were screened by reading the abstracts to decide if they were relevant; see Figure 2. During this screening, we found that most papers were related to Levels 1 or 2 crisis management, with a majority concerning health, such as surgery and emergency response, and organizational safety in high-hazard industries, such as chemical plants. Thus, after the first screening, we ended up with 41 articles. These were all read through, and after the final screening, we were left with eight articles related to Level 3, strategic crisis management. The analysis focused on papers on what skills were trained and how they were trained, which are the factors explored in this work.



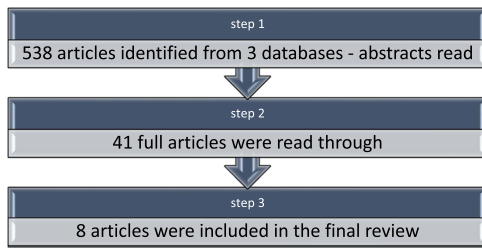


FIGURE 2 Literature review process.

### 3.2 | Analysis

We explored the papers based on (1) the skills that were trained, (2) the training method and (3) the pedagogical theoretical framework used for training. Thematic analysis (Ryan & Bernard, 2003) was used to categorize repetitions of the same concept. Ryan and Bernard (2003) argue that thematic analysis techniques may be chosen based on a set of prerequisites. We chose to base our analysis on (1) identifying themes based on *repetitiveness* or topics that reoccur, (2) systematically looking for *similarities and differences* and (3) cutting and sorting to present the repetitive and similar patterns in the articles.

## 4 | RESULT

Findings of this systematic literature review are reported based on establishing how strategic crisis management is being trained, and whether there is a best practice. The included papers are shown in Table 1.

- (1) *The skills that were trained.* The skills that were mentioned as important were (a) related to working together: teambuilding, interpersonal relation skills, collaboration skills, psychological safety, communication, emotions and information sharing (Kwok et al., 2019; van Laere & Lindblom, 2019; Sætren et al., 2022; Shaw, 2018; Simola, 2014); (b) related to understanding the situation, that is, SA (Hills, 2015; Kwok et al., 2019; Sætren et al., 2022; Steinrücke et al., 2020); (c) related to making adequate decisions in complex contexts: decision-making, problem-solving, briefing strategies, risk evaluation and crisis recovery (Hills; 2015; Kwok et al., 2019; van Laere & Lindblom, 2019; Simola, 2014; Steinrücke et al., 2020; Vandestrade et al., 2019); and (d) practicalities: a practical approach to who does what (van Laere & Lindblom, 2019), crisis recovery (Shaw, 2018) and stakeholders' needs (Simola, 2014). These skills are interpreted to be the outcome of the training.
- (2) *The training methods* in the papers were simulation (all), roleplay (Kwok et al., 2019; van Laere & Lindblom, 2019; Sætren et al., 2022; Shaw, 2018; Vandestrade et al., 2019), VR

(Kwok et al., 2019), tabletop (van Laere & Lindblom, 2019; Sætren et al., 2022), discussions (Simola, 2014) and serious gaming (Hills, 2015; Steinrücke et al., 2020).

- (3) *The pedagogical, theoretical framework* used for training. Four papers used pedagogical literature as the theoretical basis of learning (Kwok et al., 2019; van Laere & Lindblom, 2019; Sætren et al., 2022; Shaw, 2018). These were Salas et al.'s (1998) framework, Kwok et al.'s (2019) method and Kolb's (2014) ELT (van Laere & Lindblom, 2019; Sætren et al., 2022; Shaw, 2018). The training methods and the pedagogy were interpreted as the training process; see Table 2.

As a result of the analysis, we ended up with two main categories: outcome focus (what to train) and process focus (how to train). *Outcome focus* was the learning outcomes and skills mentioned in the papers as relevant. This does not mean that the outcomes were measured, but they were nevertheless mentioned as the desired training outcome. *Process focus* was how to train, including the equipment and pedagogical theory.

## 5 | DISCUSSION

To train for crisis management, one needs to prepare for unwanted incidents. It is crucial to know which skills to train for and how to act according to the crisis if it occurs.

There are many articles about crisis management and crisis management training, but there is still a gap in empirical studies of strategic crisis management training. Additionally, there is a lack of systematic approaches to crisis management training (Wilson & Gosiewska, 2014) and a varied focus on what to train and how to train in the existing literature. The outcomes that were found important were both related to safety management and crisis management. Outcomes related to safety management fell under the category 'related to working together'. Such skills need to be worked on before an incident and need time to be established. Thus, a long-term focus on establishing a well-functioning safety culture (Hollnagel, 2009; Weick & Sutcliffe, 2015) will probably be beneficial for handling a crisis.

The outcomes related to crisis management fell under the categories of 'related to understanding the situation', 'related to making adequate decisions in a complex context' and 'practicalities'. All of these aspects are important when a crisis strikes and a strategic management team is created. Therefore, it is crucial to train these skills regularly to be prepared for a crisis.

The outcome of crisis management training depends on the learning theories it is based on and the training methods, including the equipment used for training. The instructors should adapt to different learning styles and carefully consider which equipment and methods should be used for the skills that are to be trained; see Figure 3.

TABLE 1 Overview of the papers included in the systematic literature review.

Article	Short description	Skills	Training method	Pedagogical theoretical framework
Kwok et al. (2019)	Concerns crisis management, creating a strategic crisis management team, and interorganizational focus	Teambuilding, briefing strategies, SA, stress management decision making, avoiding human error	Simulation using VR, roleplay	Salas
van Laere and Lindblom (2019)	A longitudinal study of several exercises of strategic crisis management in Swedish municipalities	Interpersonal relations, collaboration skills, communication, decision making, practical approach to who does what	Tabletop, roleplay	Experiential learning
Vandestrat et al. (2019)	Concerns simulation training for a strategic crisis management team in high-risk industries	Decision-making and information-sharing	Simulated on-site (classroom and scenario-based exercises), roleplay	None
Sætren et al. (2022)	Developing learning processes for exercises when strategic crisis management teams are created. Interorganizational focus	SA, psychological safety	Simulation, roleplay, tabletop	Experiential learning
Shaw (2018)	Concerns which skills are learned through a case study of crisis management training	Interpersonal skills, teamwork, crisis response, problem-solving, crisis communication, crisis recovery	Case studies, scenario-based, seminars	Experiential learning
Simola (2014)	Exploring the outcomes of a crisis management exercise	Evaluation of risk, stakeholders' needs, managing emotions, decision-making under pressure, learning culture	Discussions, scenario	None
Hills (2015)	Describes methods for crisis management training	Decision-making, situational awareness	Scenario, gaming, laptop, VR	None
Steinrücke et al. (2020)	Develop an assessment method for crisis management decision-making in a digital serious game	Decision-making, situational awareness	Serious gaming, scenario	None

**TABLE 2** Themes, outcome and process.

Themes	Categories	Subcategories
Outcome	Related to working together	Teambuilding
		Interpersonal relation skills
		Collaboration skills
		Psychological safety
		Communication
		Information sharing
		Emotions
	Related to understanding the situation	Situational awareness
		Briefing strategies
		Evaluation of risk
		Crisis recovery
	Related to making adequate decisions in complex context	Decision-making
		Problem-solving
Practicalities	Avoiding human errors	
	Practical approach to who does what	
	Crisis recovery	
	Stakeholders' needs	
Process	Training methods	Simulation
		Roleplay
		Virtual Reality (VR)
		Tabletop
		Discussions
		Serious gaming
	Learning theories	Experiential learning
		Salas et al.'s training theory

### 5.1 | Outcome-focused approaches to crisis management training

In the literature, we observed a disparity in research focus between outcome-oriented and process-oriented approaches. Outcome-focused articles primarily address specific learning outcomes and skills to be developed, giving less attention to the methods of skill acquisition, the context of where to learn, or the equipment used. Notable papers in the literature review that predominantly emphasized outcomes and skills over process and learning theory included Vandestrade et al. (2019), Shaw (2018) and Simola (2014). The advantage of a strong emphasis on outcomes is the heightened recognition of the importance of crisis management training's learning objectives. Nevertheless, there is a substantial likelihood that the intended skills for training may not align with those actually acquired.

### 5.2 | Process-focused approaches to crisis management training

Other research articles leaned towards a process-focused approach to crisis management training. A process-focused approach involves a heightened focus on the learning methodology, theory and context, as well as the technology used in training. However, this focus may not necessarily align with the outcomes and skills targeted for training. There may also be a tendency within this category to prioritize technology and learning facilities rather than pedagogical craftsmanship. In a previous investigation of the use of virtual learning environments for driving instructors, Sætren et al. (2021) found that instructors may either lean towards a technology focus or a pedagogy focus when using advanced technology in the learning process. An excessive focus on technology may result in a lack of transference of the learning situation to the desired outcomes, and a lack of focus on the technology in use may reduce the potential gain of using such technologies.

Nevertheless, a reduced focus on pedagogy (in terms of learning methodology and theory) may possibly be due to the background of the crisis management training instructors. When educators are pedagogically trained, the likelihood of a learning-focused approach increases. Hills (2015) leaned towards a process-focused approach to crisis management training.

### 5.3 | A learning-focused approach (balanced approach) to crisis management training

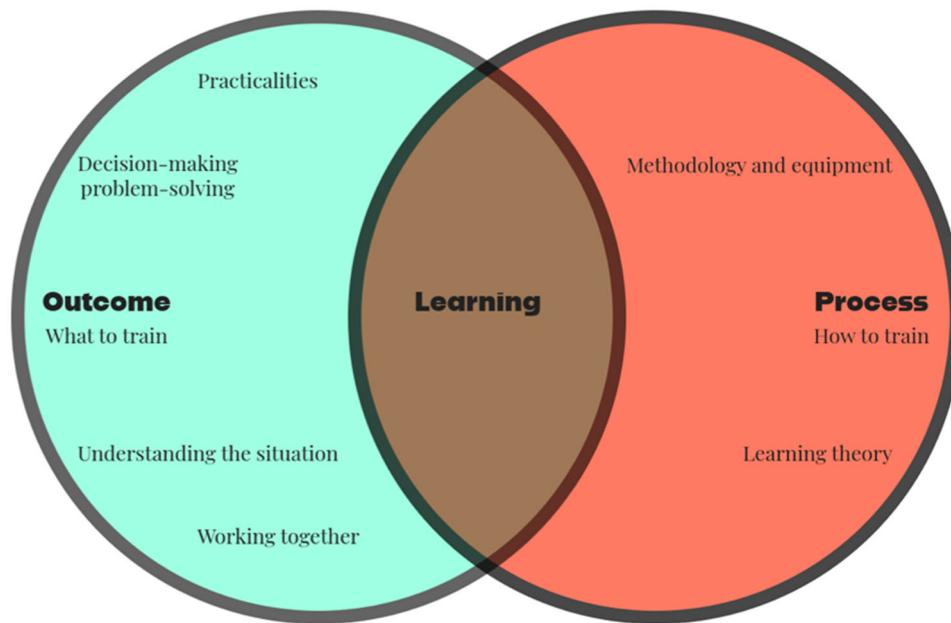
In the intersection between outcome- and process-focused approaches, we find the learning-focused approach, which strongly emphasizes the effective and pedagogically grounded training of specific outcomes and skills. In this approach, the methods employed are designed to align with the outcomes targeted for development. This type of training is grounded in relevant learning literature, which serves as a foundation for determining what should be learned. Additionally, there is often a systematic assessment of these outcomes through tests or examinations or a significant emphasis on evaluating the learning process itself.

For strategic crisis management training, this approach represents a way to ensure outcome development—building training upon a clear understanding of the skills to be trained, with careful consideration of the choice of learning methodology and equipment. In our literature review, Kwok et al. (2019), van Laere and Lindblom (2019) and Sætren et al. (2022) are examples of such an approach.

### 5.4 | Process and outcome

A clarification is needed regarding the distinction between the learning process and learning outcomes, as understood in the different approaches described above. We understand the learning process as the methods, strategies, activities, context and technologies employed





**FIGURE 3** How outcome and process is related to training and learning.

within crisis management training to attain the desired learning outcomes. These outcomes can include skills development or an enhanced understanding and awareness of a potential crisis. Different perspectives on the nature of learning can significantly influence both the process and outcomes of crisis management training. Stewart (2021) proposes that three of the different theoretical perspectives on learning could be labelled 'learning by association', 'learning by thinking and understanding' and 'learning from others'.

When taking the perspective of learning as an associative process, a typical behaviourist approach to the training process would be to provide scenarios upon which new stimulus-response, conditioned and reinforced behaviour may occur. From this perspective, there is a need to carefully design crisis management training scenarios to achieve the desired outcomes, which, in the behaviourist tradition, are seen as observable changes in behaviour. This learning perspective often serves as the foundation for training initiatives in contexts where best practices already exist, and there is a need for repetitive training of behaviours to create the desired behavioural outcomes (Stewart, 2021).

A more cognitivist and constructivist approach may focus on mental processes during the crisis management training process, viewing learning as a change in cognitive structures, schemata, perception, encoding and information retrieval. Rather than an external observable change in behaviour, the outcome may be viewed as a change in how, based on exposure to new information, one solves complex problems, makes decisions or constructs an understanding of such situations. This form of learning is mainly attributed to change in the different individuals participating in the training sessions, and such a learning paradigm is often used when the desired outcome is an increased understanding of the complexity of a crisis and the decision-making processes that are part of it (Stewart, 2021).

Taking the more socioconstructivist perspective of learning as a process where one learns from others, the process may be viewed as learning based on collective experiences and interaction with peers and the construction of new knowledge based on, for instance, collaborative learning initiatives (Stewart, 2021). In this approach, that is, in situated learning theory (Lave & Wenger, 1991), continuous learning occurs in what they call 'communities of practice', and in crisis management training, the participants' shared interest in crisis management, the growing group cohesion and the active engagement and interaction between the trainees lay the foundation for further exploration and learning.

We find it interesting that the latter perspective seems less represented in results, even though we believe that most crisis management training initiatives include a significant amount of interaction between experts in different areas of crisis management. Interaction and the construction of meaning and new practices are a considerable part of learning, and knowing how to take advantage of these activities could improve both the process and outcomes of training sessions beyond merely getting together to 'network'.

## 5.5 | Implications and further research

This research has implications for the outcomes and skills that training should achieve and the process necessary to achieve such outcomes. It benefits the field by focusing on the quality of strategic crisis management training. The study further shows a gap in this literature concerning the relation of outcome- and process-based training founded on scientifically established theories of learning. Thus, a balanced approach to strategic crisis management training that includes both outcome and process focus is suggested.

Further research should include a more balanced focus on training and explore which specific outcomes and skills are needed for safety and crisis management training, with a distinction between the management skills needed for each. In addition, research on finding best practices will be beneficial for this topic, as well as exploring how one can achieve an optimal balance of outcome- and process-based approaches.

## 6 | CONCLUSION

Work on strategic crisis management training is rather scarce in the scientific literature. This literature review shows the importance of gaining knowledge about *what* to train and *how* to train based on research. By comparing an outcome-focused approach, a process-focused approach and a learning-focused approach for strategic crisis management training, we found the latter to be the most beneficial, where both the outcome and process are in focus. With this approach, the learning outcome is based on a clear comprehension of which skills need to be trained. This approach includes carefully considering the learning methodology and equipment to enhance the training of the intended skills.

## DATA AVAILABILITY STATEMENT

Data are available by contacting the authors.

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