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Writing this thesis has been an adventure in the interesting world of crisis management organizations. This thesis studies individual type and group type learning in these interesting organizations. I 'learned' a lot while writing my thesis and I am fortunate to have had the support of many to bring it to a success. I learned that 'learning' is not a tangible concept but that you can show that you learned when you deliver visible results. This Master thesis is one of the visible results of seven years of my learning process.

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1. Introduction

1.1. The barriers of learning of crisis

Today, one of the most difficult phases of the process of crisis management remains the process of actually learning from crises (Schiffino et al, 2017: 64). There are many cases of (small) crisis incidents where the recommendations to improve the organization already exist but haven't created the desired learning impact. It is not to blame the dozens of solutions in evaluation reports, but these solutions are not always implemented due to various political- economic reasons (Broekema et al., 2017: 1). There seems to be an unbridgeable gap between 'the lessons observed' and the 'lessons learned' for most organizations as new crisis incidents proof time and time again (Dykstra, 2016: 20). It raises questions if organizations are even willing to learn from crisis and if they even can.

Earlier research has already focused on this gap and showed that learning is difficult and that the problem is not the unwillingness of organizations to learn from crisis as organizations and polities may fall into the trap of over – learning from crisis and thus ending up without learning anything (Boin & 't Hart, 2015: 13). Other scholars who focused on the topic of learning from crisis have so far dealt with the variety of influencing factors organizations face when implementing learning efforts (Broekema, 2017: 1; Stern, 1997; Roux – Dufort, 2000). This includes experiments to study the methods how new knowledge is introduced in organizations and if the learning methods are directed at the right level within the organization after crisis (Piaget, 1972; Lewin, 1936; Hubert, 1991, Stern; 1997). In other words, do the methods of learning after crisis within public organizations align with the targeted audience? These insights of psychologists and other social scientists on how individuals learn in organizations narrow down to two overarching concepts; learning takes place differently when individuals learn in groups and when people learn apart from groups (individually). These insights led to writing this thesis as psychologists showed that crisis management organizations might benefit from choosing different learning methods to introduce new knowledge after crisis.

To understand what this entails within the context of learning in organizations the following paragraph will *first* introduce the theoretical process of learning in public crisis management organizations and explain the complexity of the topic of learning in public organizations. After that the research question will be presented.

1.2. The process of governmental learning of crisis

After crisis governments are asked to re – design their institutions and internal processes of managing risks and crises in order to get them better (Renn, 2008). Ignoring learning after crisis is impossible in

the current digital era where every incident is publicly discussed¹. Learning can be initiated by public authorities, the media, parliament or merely by a process the organization initializes itself. This process of re – designing and adapting seems to be a rather straightforward process when we look at it from a theoretical perspective: a crisis event is studied by a post evaluation commission after which the conclusions and recommendations of the commission are presented to be implemented in the organization (Birkland, 2006). In practice, this ‘straightforward’ process is highly influenced by the institutional environment in which the normative assessment of performance of public organizations is shaped (Schiffino et al., 2015: 19). Within that institutional environment choices are made to implement policy recommendations, designing (new) learning programs and practice with crisis management teams. As the institutional environment differs in every organization it is interesting to study what the similarities and differences are between organizations in the choices that are made regarding learning efforts. This study will examine whether these choices are made in relation to the size of the organization.

1.3. Research Question

This thesis draws upon earlier crisis management research as it aims to gain deeper insights in the literature of learning after crisis in organizations. It separates the organizational learning process into two types within public organizations; the *individual and group learning type*. It aims to study the influence of organizational size on the choices that have been made in the learning process. The following research question will be the guideline to study the influence of organizational size of departmental crisis centers on types of learning within organizations:

RQ: To what extent does the size of Dutch departmental crisis centers influence individual and group crisis management training efforts?

1.4. Academic and societal relevance

Before diving into the literature on organizational size and learning, the motives of scholars - including mine – to study the learning efforts of crisis management organizations are interesting to reveal. As Boin & ‘t Hart adequately note, the motives of scholars are often prompted by a combination of concern and frustration. Concern that governments and organizations seem either incapable or unwilling to understand the importance of learning and the challenges involved in doing so properly resulting in the probability that similar crisis may happen again; frustration as ‘evidence – based’

¹ Dat is wel iets wat in crisismanagement de laatste jaren keihard bij is gekomen. Ze noemen dat de mediacratisering in combinatie met de jurisdisering. De grote ogen zijn dan ineens op ons gericht.

lessons seemingly been adopted and implemented, but similar crises start again' (Boin & 't Hart, 2015: 14). The 'frustration' has been made tangible by Birkland by introducing the term 'fantasy documents'. These refer to evaluation reports and other documents of which their authors believe that learning has really occurred, but in fact are documents that are created for rhetorical purposes (Birkland, 2009: 2). Another frustration that is illustrated by reactions of society, organizations and political members when yet again a public organization is malfunctioning even after earlier evaluation reports have provided the needed answers (Karabulut, 2017, van Silfhout, 2014). A recent study of Broekema et al. found that those post crisis evaluation reports do not significantly affect the learning process of a public-sector organization but other key factors play a more important role in the learning process (Broekema et al., 2017: 1). Factors related to organizational size such as human and financial capacity might play a bigger role on the output of the learning process. This research aims to add knowledge to the academic discussion within organizational learning what that role of factors related to organizational size is and how these factors influence individual and group learning efforts in crisis management.

Society however isn't interested in the influence of size and budgetary issues, but in the ability to learn from crisis to give an organization the possibility to reclaim their organizational legitimacy. This legitimacy is threatened during crisis when the organizations actions or inactions are viewed as violating social norms or are undesirable (Patterson and Watkins – Allen, 1997: 23). The organizational legitimacy is restored when an organization can successfully learn from their actions or inactions. New research into organizational learning can help restore organizational legitimacy as it aims to provide new answers on unanswered questions. This thesis will focus on the phase of learning after crisis which is receiving more and more attention by scholars lately (Smith et al, 2007). In this so called 'cold phase' of crisis management it is better possible to compare the structure of crisis organizations, study the motivations of crisis managers and indicate if methods of learning are used in the most effective way.

1.5. Thesis Outline

The introduction has focused on the relevance of organizational learning, the attention the topic has been given in recent years and the motivation of scholars to study organizational learning after crisis. The second chapter presents the theoretical framework in which the theory of organizational learning is explained and linked to the factors of organizational size that influence learning methods. In the third chapter the methodological essentials of this thesis will be discussed. In chapter four the results of the research are analyzed by using a narrative approach and crosschecked with quantitative data and in the following chapter the findings will be discussed and linked to the theoretical components of this thesis. In the concluding section this thesis will answer the research question and identifies future research in this highly interesting field.

2. Theoretical Framework

Crises have been interpreted as windows of opportunity for change in organizations (Kingdon, 1995). This conceptualization of a window of opportunity has been strengthened by the notion of reaching the point of recalcitrance after crisis, which indicates that our perceived reality is contradicted by an experience (Burke, 1954). That implies that organizations will always be influenced by crisis events that emerge even if organizations want to forget the event. Organizations must use this opportunity for directed change to renew the organization after a crisis, as crisis unconsciously changes the way we interpret the normal standard (Veil, 2015: 55). Veil and Sellnow argue that the experience of crisis can shock organizational systems out of complacency which enables organizations to learn from crisis (Veil and Sellnow, 2008: 12). If seen in this manner, crisis can be used as a trigger point to start a valuable organizational learning process (Epple et al., 1996). It also helps organizations to build resilience and enhance its crisis management capabilities (Crichton, Ramsay & Kelly, 2009).

To effectively study how organizations make their choices within the organizational learning process it is necessary to understand *what* organizational learning entails and *how* an organization learns. Therefore, the theoretical framework will *first* provide a definition of organizational learning and will introduce the concepts of individual learning and group learning. Here the complexity of the process of organizational learning will be explained by building on the levels and stages in the framework of Crossan et al (1999). Second, the individual type of learning will be discussed and I will introduce the concepts of knowledge acquisition which explains how individuals learn (Huber, 1991). *Third*, the group learning type will be introduced (Piaget, 1972). In the last section of this chapter the concepts of learning will be linked to the factors of organizational size.

By linking the concepts of individual- and group learning with factors of organizational size it is possible to construct a framework that studies the impact of organizational size on the output of learning. These combined theories and concepts within organizational learning will construct a framework which will be used to test the hypotheses related to the context of learning in crisis management organizations.

2.1. Organizational Learning

To effectively study how organizations draft their learning process it is necessary to understand *what* organizational learning entails and *how* individuals in organizations an organization learns. This subsection focuses on these questions by defining organizational learning and introduces the different types of learning within organizations. The focus is aimed on the process of learning in relation to the stage of learning in the organization.

2.1.1. Definition of learning

Most scholars disagree on the definition of organizational learning as the term is used in different academic perspectives. Despite the fact that the term is being transformed to pursue the benefits of studies in different domains, most scholars agree by using the dictionary definition of learning as a starting point. That definition states that learning is ‘the acquiring of skill or knowledge’, which implies that an individual obtains a physical ability to act upon the learned skill or create a conceptual understanding of an experience (Kim, 1993: 49). This can be combined with the definition of Argyris who argues that organizational learning is a process of detecting and correcting error (Argyris, 1982). This implies that learning takes place only when new knowledge is translated into different behavior that is replicable. For this study it is useful to combine these definitions as in crisis management learning detecting and correcting error is important to prevent crisis and the definitions include two parts: what people learn (know – how) and how they understand and apply that learning (know – why), because in the end crisis management trainings are aimed of developing the knowledge of crisis managers (Kim, 1993: 49). Despite the differences in definitions, the effect of definition on actual crisis management learning methods will in the end boil down to the same core learning mechanisms (Broekema et al. 2017).

In this analysis part of this thesis two learning methods will be studied: individual training methods and group training methods. Therefore, it uses organizational learning theory in two ways: to explain that the effects of individual learning are different from group learning methods and to link the influence of organizational size on the choices crisis managers make in the post crisis learning process by choosing what types of learning are provided to take part in by crisis management practitioners.

The following section will explain what individual and group type entail.

2.1.2. Types of organizational learning

Organizational learning is commonly presumed as the sum of individuals that learn and groups that learn within the organization, but this is not true as the sum of learning is submissive to different individual and political influences. The main procedural reason for this is that learning within organizations surpasses an *individual, group and organizational* level which influences the learning process (Crossan et al. 1999). That means that knowledge of individuals is not representative for the whole organization neither it is for a group within the organization. The knowledge belongs to the individual and is transferred within the organization when people interact with one another or interact in groups. By transferring knowledge through interacting with other individuals the knowledge flows through the levels within the organization which can create different patterns of organizational learning. This section discusses that learning starts at the individual and that a progression of learning is present at each stage. In table 1 the different levels are linked to a specific process. These processes will be explained in the subchapters of those levels.

Table 1. The levels of learning in relation to the underlying processes.:

Level	Process
Individual	(1) Intuiting
	(2) Interpreting
Group	(3) Integrating
Organization	(4) Institutionalizing

Source: Crossan et al. (1999)

This thesis explicitly does not focus on the effects of organizational learning as learning need not result in observable changes in organizational behavior (Huber, 1991: 89). It focuses on the implementation of knowledge by training methods at different levels within the organization. The next paragraphs will separate the process of learning within organizations in two phases or types: individual and group type. The following sections will elaborate on the theoretical methods of learning on these levels and will be used to construct a clear picture on the theoretical basis of organizational learning.

2.2. Individual learning; intuiting + interpreting

The individual level is directly linked to individuals in organizations. Individuals learn by two different processes: *intuiting* and *interpreting*. *Intuiting* is the first phase of learning at the individual level wherein 'the preconscious recognition of the pattern and or possibilities inherent in a personal stream of experience' (Weick, 1995b: 25). In other words, individuals learn after experiencing and observing crisis, images of crisis and trainings in crisis management. In crisis management literature, the *intuiting* process is already linked to the notion of recalcitrance when the process is affected in organizational crisis (Veil, 2011). The *second* phase of learning at the individual level is interpreting by actors.

Interpreting is the explaining through actions or words of an insight or idea of individuals and to other individuals (Crossan et al., 1999: 525). The process results in the development of organizational language/jargon or the construction of a cognitive map of various domains in which an individual operates (Huff, 1990). In practice this means that *interpreting* results in taking actions during crisis, while after crisis *interpreting* is used to build an understanding through evaluating and learning. The concept doesn't necessarily have to be observable as the constructing of a cognitive map is a learning outcome which isn't observable by direct behavioral (Friedlander, 1983: 194). Intuiting and interpreting are two processes that bundle the wider theoretical knowledge of how individuals learn. To fully understand the process how individuals can learn the following paragraph will give an overview of the fundamental concepts of learning by individuals. This is important and needed to build a substantial argument for the operationalization in chapter three.

2.2.1. The individual in the learning process

The definition of organizational learning in the previous paragraphs emphasized the importance of individuals in the learning process of organizations. They are the main drivers of learning within organizations and can boost or obstruct learning in many ways. Intuiting and interpreting are the two conceptual processes within the framework of Crossan et al. (1999) that focus on individual learning. When experiencing crisis, the learning process is highly influenced due to actions of individuals and other external influences that affect the interpreted situation by individuals (Smith, 2005: 121). But how can individuals acquire knowledge and use it effectively during crisis? The following paragraph will dive into the psychological process that enables learning.

I use the organizational theory of Huber who claims that individuals can acquire knowledge through five different processes of individual learning (Huber, 1991: 89). In the following paragraph the concepts of this theory are introduced.

2.2.2. Individual knowledge management

Huber assumes that individual learning occurs through five different processes of learning when individuals within organizations acquire knowledge and interpret it as potentially useful for the organization. For crisis management, knowledge management is an important process in the learning process as ineffective management can lead to crisis if information is misunderstood, forgotten, hidden or ignored (Veil, 2015: 63). Huber describes five processes through which learning is established of which two, congenital learning (1) and experimental learning (2), are internally aimed and three are externally focused: vicarious learning (3), grafting (4) and search and noticing (5) to learn:

- (1) The *first* concept, *congenital learning*, is acquired when an organization is founded and when new employees join an organization (Huber, 1991: 91). It is a combination of the construction of different learning types, such as vicarious and grafting (see following page) and entails all the information that employees possess prior to their employment at an organization. It is assumed that this process is inherent to every organization which makes it hard to train and learn.
- (2) The *second* concept is *experimental learning* which is acquired when organizations operate day to day practices and can be both unintentional or intentional (Huber, 1991: 91). Crises are the best example of unintentional experimental learning as learning takes place through recalcitrance. The crisis theory of sense making is derived from *experimental learning* as it suggests that only through acting and experiencing organizations can learn to understand and retain information (Weick, 1988).
- (3) The third concept is *vicarious learning* which is related to the successes and failures of similar organizations and suggests that organizations can learn by analyzing what happens to individuals when they engage in different behavior patterns. By looking at similar organizations actors can learn from the pitfalls, failures and successes of others. External and internal evaluations of crisis can help to boost this learning process.
- (4) The fourth concept is *grafting* which is closely related to congenital learning except for the fact that it only stimulates to learn from new organizational members, rather than focusing on how to train new employees of the organization (Veil, 2015; 63). When organizations hire new members or are forced to work with other individuals of external organizations this type of learning occurs.
- (5) The last type of learning, *searching and notices*, entails the scanning of the internal and external environment (Huber, 1991: 94). It stimulates organizations to foresee if their organizational strategy is resistant to future events. In crisis management *searching and*

notices can be referred to establishing foresight within the organization. If the organizations culture is focused on preventing crisis and disasters this learning process is highly important.

These processes are mainly attributed to the individual level and will become part of the group level after certain steps of sharing knowledge are taken. These will be described in the next paragraph about the group level in organizational learning.

2.3. Group learning: integrating

For crisis management practitioners groups can be defined as the group of individuals that work together in a team during crisis and the group that works together during the post crisis phase (their department). But what makes learning in groups different from individual learning?

The key difference is that when individuals collaborate in groups a process of integration of knowledge occurs among members of the group. This process of *integrating* links the individual level to the group level by developing a shared understanding among individuals and enable individuals to take coordinated action through mutual adjustment (Crossan et al., 1999: 528). Some argue that individual learning must always be seen in the context of the 'group' for which they form part in (Lewin, 1936). In that sense the group forms the grounding to a person's individual perceptions (van Haperen & Borodzicz 2002: 6). But what really distinguishes group learning from individual learning, is that group learning after crisis occurs along three dimensions: institutional, interpersonal and personal due to the involvement of several individuals (Serrie, 1992; Stern, 1997: 70). To bring it back to the definition of learning this means that group learning is not only about the acquisition of knowledge or skills but helps to develop a way of thinking and an understanding of the modes of social organizations (Stern, 1997). By exchanging thoughts of past crisis incidents learning occurs during evaluations, but real learning in groups is aimed at reproducing reality so that participants can experience elements of crisis management procedures (van Haperen & Borodzicz: 2002: 10). The final theoretical part of group learning in crisis is to debrief groups on training and crisis procedures to learn transferable skills and concepts (Thiagarajan, 1993: 47). In the end the goal of group learning is to create a 'shared mental model' within a team as multiple studies suggest a positive relationship between teamwork and organizational performance (Baker et al., 2006: 85).

In the next section I will link individual and group learning training methods to a factor that influences the availability of these trainings within organizations: *organizational size*.

2.4. Relation of learning in crisis organizations with organizational size

In the previous paragraphs the focus has dominantly been on organizational learning theory in relation to methods to stimulate learning in crisis management. This section will connect learning in crisis management with factors of organizational size that might influence choices that are made on the strategy to learn by the choices that are made in providing individual or group training methods.

A first factor of organizational size that is likely to influence the choices that are made in the learning strategy is the available budget. Budgets are a major feature of most public organizations and are used as a means of communicating strategic priorities and coordinating the way to go (Abertnethy & Brownell, 1999: 191). Most studies assume that budgets have a flexible role and have a traditional purpose of attributing responsibility for outcomes to members or functions (Abertnethy & Brownell, 1999: 191, Simons: 1990). This study zooms into the influence of organizational factors on the type of learning methods and the implication of priority selection. I use availability and size of budget as variables to test whether this factor of organizational size plays a role in the availability of different types of learning methods. Borodzicz and van Haperen note that group training methods in crisis management departments tend to be more resource intensive to produce due to the participation of multiple employees (Borodzicz and van Haperen, 2002: 13). This leads to the first assumption:

A1: The size and availability of budget in crisis management departments have a direct influence on the amount of individual and group learning type methods.

Another factor of influence within the concept of organizational size might be the suggested human resource (HR) - based relationship of individual employee output (Huselid, 1995: 67). This resource – based relationship means that the number of employees can influence the output of departments. In non – academic terms, this comes down to the logical calculation that two employees can achieve more than one. In the case of crisis management organizations where part of the individual employee output focusses on stimulating learning by developing and distributing learning methods, the number of employees within a department might influence the amount of methods which focus on individual and group learning. This leads to the second assumption:

A2: The number of employees working in a crisis management organization have a direct influence on the amount of individual and group type learning methods.

3. Methodology

The theoretical framework consists of several theories of organizational learning that explain the theoretical processes of certain types of learning within organizations. At the end of the theoretical chapter the link between organizational size and types of learning has been put forward. This link will be used to study the possible influence of organizational size on choices in the types of learning within public organizations. This chapter focuses on the type of research that will be conducted, what data is relevant, how the data will be gathered and how the theoretical concepts will be operationalized. Finally, the reliability and the validity of the research will be discussed. But first the research design:

3.1. Research Design

This research design aims to present a logical plan for utilizing the theoretical knowledge on the types of learning into empirical results. It helps to streamline the study into answering the main research question of a possible relation between variables of organizational size and the types of learning within public organizations. A comparative case – study design will be used to test the independent variable of organizational size on the dependent variable of the types of learning. The essence of using a case study is that it ‘tries to illuminate a decision or a set of decisions: why they were taken, how they were implemented and with what results’ (Schramm, 1971). The cases that will be used are two departmental crisis centers (DCC) in the Netherlands which are part of two different Dutch Ministries. By using a comparative case study, it was possible to do justice to the difficult organizational setting of learning programs in the context of crisis. Another factor to study the variables was the use of quantitative data substantiated with findings from interviewing civil servants working at departmental crisis centers who coordinate learning programs. By crosschecking the data, it was possible to find more substantiated evidence for the research findings.

As small sample comparative case studies are hard to generalize and replicate, the following sections will thoroughly explain how the case will be studied and what selection criteria will be used. This has been done to ensure that the substantiation of these cases is clear and matches the research objective.

3.2. Case selection

To maximize the result of studying possible influence by factors of organizational size on the types of learning within departmental crisis centers, a most different case study selection was used based on several specific characteristics.

3.2.1. Unit of analyses

The primary criterium for the case selection was whether the public organization is engaged in organizational learning in a crisis management setting on a structural basis. National organizations, like

departmental crisis center of ministries, are continuously engaged in preparing, preventing, responding and evaluating incidents and crises which make them a plausible case (IFV, 2017a, Ministry of Infrastructure and Environment, 2014). The aim of departmental crisis centers is to improve daily practices in improving preparedness through risk assessments, the organization of crisis exercises and continuously improving learning of risk- and crisis communication (OECD, 2017). Furthermore, the DCC's have nine important roles regarding crisis management within the Ministry; support of internal divisions in crisis (1), updating crisis handbooks (2), improvement projects and intensifying teamwork within the ministry (3), giving courses how to handle crisis by training and practicing crisis management (4), occupation during crisis (5), information management (6), practical facilities (7), spill in the network (8) and the evaluation of crisis (9) (Ministry of Economic Affairs, 2014).

The second characteristic was provided by the role DCC's play in the network of the Dutch crisis management for public organizations: they are advisers to local municipalities, security regions, water boards, other public institutions and the own ministry. After crisis DCC's evaluate the management of events and are responsible for the implementation of policy- and structural recommendations and the training of their crisis teams (Nationaal Handboek Crisisbesluitvorming, 2016: 11 - 12). This characteristic shows that the cases are actively involved in training after crisis.

The third characteristic for the case selection was the impact of the DCC on society and the frequency they deal with larger crises. The reason for this is that not all DCC's have 24/7 monitoring personnel and handle incidents on a daily basis which reduces the role they play within the crisis network of public organizations. If we look at the sample, the DCC's which are involved in preventing (animal) diseases, security threats and infrastructural accidents deal with most of the crisis incidents in the Netherlands. A crisis in this context will include all incidents that triggered the DCC's to scale up to a crisis team to counter the events.

The fourth criterium is the accessibility to quantitative data regarding the DCC's budgets and human capacity for dealing with crisis and learning opportunities. This data is available in the annual reports of the ministry which are distributed to parliament. To ensure that available resources would become the main indicator of the outcomes of this research some interviews were held to clarify differences and thoroughly understand decision making within the DCC's.

The final and most important criterium is that the case must be engaged in the process of learning after crisis. Departmental crisis centers are the boosters of learning within ministries as they initiate most evaluations studies and programs that focus on learning within the organization. The purpose of

crisis evaluation reports is to enable collective learning and to assess accountability of persons and/or organizations (Van der Meer & Edelenbos, 2004: 3). Recent examples in these departments are the Avian Influenza reports of 2015 & 2017, the evaluation on the crisis management procedures regarding the handling of the incident at the weir of Grave and the crisis management procedures at the Merwede bridge (Van Zanten et al., 2015, Van Zanten et al. 2017a & Van Zanten et al. 2017b).

The Departmental Crisis Centers that meet these five criteria are the departmental crisis center of the Ministry of Economic Affairs (EZ) and the departmental crisis center of the Ministry of Infrastructure and Climate. Table 1 shows the criteria in relation to the sampled cases.

Table 2: Summary of Case Characteristics

Characteristics	DCC Ministry of Economic Affairs and Climate	DCC Ministry of Infrastructure and Water
Focus on crisis coordination and management	Yes	Yes
Coordinating player in the Dutch crisis management network	Yes	Yes
Accessible information	Access to key players	Access to key players
24/7 monitoring	No	Yes
Average Annual Budget (2012 - 2017) ²	€ 6,27 million	€ 4,42 million
Average Human capacity in DCC ³	4	11
Average yearly number of crisis ⁴	4	24

3.2.2. The unit of observation

The quasi- qualitative design of this explorative research required to crosscheck quantitative data by interviewing civil servants working at the DCC's. These civil servants were selected via a snowball sampling and purposive sampling strategy. The interviews were held with civil servants working in the department of crisis center and with crisis managers who work within the ministry with the departmental crisis center during and after crisis. Interviewees will only be selected who have worked in a similar function for more than 5 years to ensure that they have an overview of multiple crisis

² See Paragraph 4.3 for comparison table of budget

³ The amount of people that work in the departmental crisis centre **after** crisis! Not the amount of people who are engaged in crisis management **during** crisis.

⁴ The average amount of times that the departmental crisis centres scale up to a crisis team per year.

incidents and learning processes within the department. All interviewees worked at the Ministry of Economic Affairs during the avian influenza crisis of 2015 in a crisis management role and experienced the learning process after the evaluation of the crisis. All interviewees of the Ministry of Infrastructure and Water worked had been working in the department for more than five years and have worked on several crises. A list of proposed interviewees has been attached in the appendix.

3.3. Data Collection

The primary data for this research will be derived from annual reports of the ministries consisting of the variables of organizational size. These will be crosschecked by performing 7 semi structured interviews with key players in the crisis management department of the Ministry of Economic Affairs and the Ministry of Infrastructure and Environment. Crisis coordinators and crisis managers within the organization were interviewed which ensured a solid base to conclude the analysis. One crisis coordinator from the Ministry of Health, Welfare and Sport (VWS) was interviewed as the researcher knew him personally and asked him to reflect on learning programs in general. That interview was not used to crosscheck primary data of the DCC’s but was helpful to get a clear picture of procedures within DCC’s.

Another advantage of interviewing both crisis coordinators and crisis managers is that it took away a one – sided view of the types of learning within the organization. A third advantage is that it studies two divisions within the ministry involved in the learning processes by which the *individual learners* and *group learners* make it better possible to generalize the results to other public organizations.

Prior to conducting the interview, two interviews were held with two members of the evaluation team who studied the crisis management procedures of the avian influenza by the Ministry of Economic Affairs to understand the context of the organization from an external perspective. The external interviewees knew the learning processes of the DCC and were able to shape the interview questionnaire to get a maximum result when conducting the interviews. To ensure a thorough understanding of the crisis procedures and training programs of the Ministries was present, some knowledge was conducted from secondary data which are all described in the following table:

Table 3: Data collection

Method	No.	Source (document/crisis manager/CM learning coordinator)
Expert interviews	7	
Crisis managers	2	Bob Endt (EZ), Michiel Hoorweg (VWS)
Crisis coordinators	3	René van der Helm, Hayat Bulahruz, Leo van Malland
External experts	2	Ben Smit, Joost Koomen

Document Analysis	18	
Annual Reports Min EZ & Min I&W (2012 – 2017)	8	Annual reports of the Ministry of Economic Affairs and the Ministry of Infrastructure & Water
Crisis Handbooks	6	National handbook for crisis – decision making (2013), Departmental Crisis handbooks DG ETM (2014), Crisis management MinEZ (2016), Crisis management MinIenM (2016), Leerprogramma van de Nationale Academie voor Crisisbeheersing (2017), Beleidsplan Crisisbeheersing 2014 – 2017
Evaluation Reports	4	Report on Avian Influenza (AI) 2015, Report on AI 2017, Report on crisis management at the weir of Grave

Respondents were given the possibility to check the content of the interview after the transcriptions had been made. These transcriptions were sent to the interviewees for corrections and added to the appendix. Recording also ensured that the respondents answers were correctly interpreted by the interviewer. However, recording did bring the risk into play that response might gave socially desirable answers (Bryman, 2012: 219). By providing clear instructions to the respondents about the purpose of this research it was hoped that this eliminated the threat.

The interviews show a view on different crisis management topics in the Ministry of Economic Affairs and the Ministry of Infrastructure and Environment about organizational learning and will link the crisis management view to the outputs and inputs of the training programs of the DCC's. These will be discussed in the next paragraph of operationalization of concepts. This will be done by performing a content analysis which categorizes the answers of the interviewees. The coding scheme is explained in the next paragraph.

3.4. Operationalization of concepts

In this paragraph I explain how the theoretical concepts of organizational size and types of learning were operationalized. The concept of organizational size was operationalized by looking at the budget and human capacity numbers from several annual reports of the two cases. A first attempt to study the types of learning by only interviewing crisis managers failed because the answers were highly subjective to the understanding of the concept of learning by the interviewees. Therefore, this research chooses to operationalize the theoretical learning processes by looking into the tangible training programs and evaluation frameworks that departmental crisis centers develop. The current training programs were divided into two types: trainings that focus on individual learning and trainings that focus on group learning. The indicators in table 4 were derived from theory and offered a

possibility for operationalizing the current training programs of the DCC's into trainings that focus on *individual* learning and trainings that focus on *group* learning:

Learning Type	Process	Indicator	Sources
Individual Type	Intuiting	<ul style="list-style-type: none"> - Learning through observing images - Learning through observing texts - Learning through observing experience - Learning through observing metaphors - Learning through observing failures - Learning through observing successes 	Training programs & Interviews
	Interpreting	<ul style="list-style-type: none"> - Learning through explaining texts - Learning through evaluating crisis - Learning through developing new knowledge - Learning by understanding insights - Learning by understanding contexts of crisis (the bigger picture) - Learning by constructing understanding context - Learning through conversation - Learning through dialogue 	Training programs & Interviews
Group Type	Integrating	<ul style="list-style-type: none"> - Learning by creating a shared understanding - Learning through group meeting evaluations - Learning through evaluating crisis - Learning by simulating crisis - Learning by creating interactive systems (matching systems that weren't matched) 	Training programs & Interviews

Table 4 Operationalization of the types of learning

Source: Crossan et al. 1999:534

All training programs of the DCC were coded separately and given a code number 0 (individual) or 1 (group) in SPSS. By using statistics, it was possible to compare and study correlations between human capacity, budget and type of learning. Here is an example how coding of training programs was executed:

Training program	Type of learning	Coding #
Basiscursus crisisbeheersing	Individual learning	0
Training verslaglegger	Individual learning	0
Training liaison officer	Individual learning	0
Crisis exercise	Group learning	1

Table 5: example of coding

The variables of organizational size, budget and human capacity were derived from the annual reports of the Ministries and the interviews. To operationalize the fluctuating budget and to compare it

between the cases this study chose to operationalize budget as 'large and 'small. That means that 'large' is an annual budget of 5 million euro's and more for the departmental crisis center and 'small' is an annual budget of less than 5 million euro's. By operationalizing budget in such a way, the fluctuating budget represents an independent variable. The other independent variable is human capacity which was operationalized by categorizing the human capacity of the DCC into two categories: small capacity and large capacity. The human capacity within the DCC's ranged from 1 to 15 fte during the years 2012 – 2017 which led to the following categorizing: small capacity stands for < 7 fte and large capacity stands for 7+ fte.

The interviews were used to crosscheck the findings and played an important part in understanding relations between these variables and the *individual learning and group learning processes* of the ministry. Furthermore, it was too cruel to compare quantitative data that on first sight doesn't seem to correlate with learning or training programs. I used a narrative approach to label the interview transcriptions per subject on (1) interviewees, (2) type of learning, (3) the method used to teach. By using a narrative approach on the transcriptions, the analysis will be partly replicable and most importantly, valid inferences from the interviews to the contexts of their use can be found (Krippendorff, 2004: 18). Coding the interviews and using more severe content analysis was not possible due to the subjective subject of learning. Every interviewee interpreted organizational learning in a different way but did reflect on the relation between organizational size and the learning programs. The narrative approach also enabled this research to reconstruct accounts of connections between events and context (Bryman, 2012: 584). Reconstructing the experiences of interviewees enabled this research to understand correlations between organizational size and types of learning. It also gave more possibilities to interpret the data and look at organizational learning from the perspective of the interviewer.

After the interviews were conducted a quick review on the transcripts was done to look if topics were repeated in several places, what surprised and what the interviewees argued as important. Next an analysis was performed on the words and sentences that pointed to the theoretical concepts from the theoretical chapter and which were common in previously published research

3.5. Reliability and validity

To prove the quality of the research design four commonly used tests in social sciences were used to test the research design (Yin, 2014: 45). These consisted of *construct validity*, *internal validity*, *external validity* and the *reliability test*, which test the credibility, confirmability, trustworthiness and data dependability (US Government Accountability Office, 1990). In other words, it will test if what is measured is applicable for answering the research question.

3.5.1. Construct validity

Testing the construct validity is especially challenging in single case studies as it identifies ‘correct operational measures for the concept being studied’ (Yin, 2014: 46). The types of learning were difficult to operationalize without doing harm to the theoretical conceptions. In the end the framework of Crossan and the types of individual learning were combined to create indicators. I did widen their concept a little to the context of crisis management as I rewrote some concepts from ‘learning from explaining texts’ to ‘learning from explaining evaluation reports’ (Crossan et al., 1999: 94). These were all minor changes that did not harm the operationalization of the inventors. The two types of learning were initially designed for routine organizations which is rather different than learning after crisis as organizations might experience external and internal factors which can influence the learning process (Broekema et al, 2017: 5). I did however operationalize these concepts in a way that did not take into account other factors that influence the training process which might be a weakness in the design. These factors differ per organization and were impossible to measure all in the given timeframe of this thesis.

3.5.2. Internal validity

The internal validity is affected by the quality of the interviews and the quality of the interviewees. To ensure that the interview questionnaire was set up in the right way, a test interview was held to figure out if the proposed questions were leading to the answers needed. All interviewees that have been selected had significant experience (5+ years) in working on learning programs that were designed after crisis. I tried to reduce the bias of the interviews by questioning the interviewees in a direct way. Another pitfall of interviews is that interviewee might give social desirability answers to make sure that the image of the DCC is outstanding (Yin, 2014: 106). However, a professional attitude of the interviewees on this point can be expected. The final problem that occurs is that the experiences, backgrounds and perceptions of individuals lead to the situation that the social construction of ‘crisis’ is interchanging through time and organization (Deverell & Stiglund, 2016: 29). This is something that is hard to solve as the organizations change rapidly due to new employees and new learning methods that are introduced in organizations continuously.

3.5.3. External validity

The external validity deals with the problem of generalizing the results of this research to the wider population of public organizations who deal with crisis (Yin, 2014: 48). Since the study is focused on two case studies that specializes in crisis management it is harder to generalize results. However, while the context of crisis and the internal and external institutional factors might vary at public

organizations, the methods of learning are based on government wide production of 'OTO – plans' which prescribe types of training. These types of training are related to the levels of learning this study is assessing which is a reason that the operationalized concept is quite constant. This argument does not count for organizations who do not specialize in crisis management by training programs which makes this research limited to generalize to all public organizations.

3.5.4. Reliability

The reliability of this research can be checked by repeating the same research in a different timeframe. The goal of reliability is to minimize biases and errors (Yin, 2014: 49). To maximize the reliability, the operational steps were documented to ensure new researchers can perform the same study again. With the quantitative data it is easy to reproduce as the data can be found in the annual reports of the ministries. However, due to the narrative approach for analyzing the interview results it is dependent on how the data is interpreted. Therefore, the analysis has been done with direct quotes to ensure it is clear what is being meant by interviewees. Another factor for the reliability is that the interview results depend on the mood of interviewees but should reflect the same results when the interview protocol is followed. Asking detailed questions in a few years from now about the learning programs and procedures might result in 'forgotten knowledge' as most interviewees will not remember all details. Reliability of the interview data is recorded by comparing the interviews.

4. Analysis

This section describes the results from the quantitative research and the conducted interviews. First, the two cases are assessed separately: the DCC of the Ministry of Economic Affairs and the DCC of the Ministry of Infrastructure and Water management. As the interviews have been performed in Dutch, the quotes were translated and the original text has been put in the footnote. The structure of this chapter is as followed: First, a brief case description is given to understand the current process of learning after crisis within the departments. Second, the current training programs of learning of crisis management of the cases and the statements of the interviewees are related to the theoretical concepts of types of learning. In the final section the influence of budgetary and human capacity variables will be discussed and related to the types of learning.

4.1 Case 1: Departmental Crisis Center of the Ministry of Economic Affairs

The departmental crisis centrum (DCC) of the Ministry of Economic Affairs is responsible for effectively handling the crisis management policies and professional approach of crisis (Annual report Ministry of Economic Affairs, 2017). During crisis, the DCC coordinates the information flow within the Ministry of Economic Affairs and holds the responsibility of crisis management proceedings. In recent years the tasks and policy areas have increased substantially due to the merge in 2010 of the Ministry of Agriculture, Nature and Food Quality with the Ministry of Economic Affairs. It is unclear what the new responsibility of the departmental crisis center will entail after the latest cabinet formation in 2017 and the establishment of two new ministries⁵.

This section looks into the organizational learning efforts of the DCC by examining the theoretical processes of individual and group learning. As stated in the theoretical framework, organizational learning in the simplest form is defined as a process of detecting and correcting error. The process of detecting and correcting error is most tangible in the phase of a scaled-up crisis team at the Ministry of Economic Affairs, but it does only operate as an active crisis management structure after the director has scaled up the organization to a 'crisis organization'. Most small incidents the Ministry does not treat as crisis but treats them as 'incidents'. This is done as directors and director – generals are anxious to scale up the organization to avoid political risk and cost due to extra support of employees^{6,7}. One external expert who left the Ministry in August 2017 underlined that this 'organizational mechanism'

⁵ Crisis Coördinator: Het is nog onzeker wat er gaat gebeuren met de nieuwe situatie waarin we zijn terecht gekomen nadat het Ministerie is gesplitst.

⁶ Crisis Coordinator: (when asked at the amount of scale ups of the organization). En dan merkte je wel dat er bij EZ wel een beetje huivering is om op te schalen.

⁷ External Expert: Er zat een politieke dynamiek achter om iets niet een crisis te noemen. En dat heeft niet geholpen, vaak. Het mocht geen crisis heten, dus het werd ook niet zo aangepakt. Was het wel.

of not scaling- up to a crisis team was 'a structural learning issue'⁸ which came back in every crisis he had worked on in a period of five years. The 'structural learning issue' is an example of failure in the learning process as there are institutional factors that influence the decisions made during crisis which are hard to unlearn.

4.1.1. Individual learning type

To guideline the discussed concepts of learning in the interviews a brief overview of the theoretical definitions was provided to the interviewees. Learning was defined as the process wherein individuals gain new knowledge and translate this new knowledge into more effective action (Crossan et al. 1999). This definition was emphasized by one of the interviewees in the discussion on the difficulty to measure learning:

*Interviewer: The difficulty of learning is that it doesn't involve a measurable instrument. So, your view on learning is that writing crisis handbooks, evaluations and organizing trainings and exercises help to get better in crisis management.*⁹

*External expert: Yes exactly, by doing that you stimulate the learning process. Otherwise it only happens unconsciously and without obligation you won't make any steps. However, you cannot measure the intangible cases. What I mean with that is that you need a plan with actions to ensure the learning will happen when the plan is executed.*¹⁰

A lot of focus of interviewees was on the tangible objects that are created after crisis: (revision of) crisis handbooks, evaluation reports, role trainings and exercises. Regarding the individual learning aspect, it depends on each person how they learn and what they learn. What they learn cannot be presented in measurable output, but the Ministry stimulated employees by sending them to the same training courses to give everyone a minimum level of crisis management skill:

Crisis manager: When employees start in a crisis management role within the Ministry, they are sent to the interdepartmental crisis management training. These trainings are hosted by

⁸ External Expert: Een van de leerpunten was dan altijd: benoem het eerder als crisis, want dan werkt het beter. Dat is zo'n structureel leerpunt wat elke keer toch weer terugkwam, want er zat een organisatie mechaniek achter waarom dat niet gebeurde.

⁹ Het lastige van leren is dat je er geen meetbaar instrument aan kan koppelen. Dus die tastbare zaken zijn heel nuttig om daar beter in te worden. Dus jouw kijk op het leren van crisis en de stimulans die daarin te halen valt is dat je tastbare zaken maakt: evaluatierapporten, handboeken, trainingen en oefeningen. Om ervoor te zorgen dat medewerkers daar mee in aanraking komen, ervaring krijgen en je het leerproces kan stimuleren.

¹⁰ Ja precies, daarmee stimuleer je het leerproces. Anders gebeurt het alleen onbewust. En vrijblijvend en daar maak je geen stappen mee.

the National Academy for Crisis Management, a department of the Ministry of Justice and Safety. I also send my employees to the information coordinator course as that role is highly needed in every crisis team. But for the other trainings and courses it is up to the individual employees if they pursue their development and in which they enroll.¹¹

This procedure of enabling new employees to learn the basics of crisis management within the department is an example of the individual process of *congenital learning*. The department learns as the knowledge that employees possess prior to their employment at the DCC is acquired by sharing of that information. The new employee learns from the basis training when he is provided with a basic understanding of the crisis organization. The DCC gives employees the same basic knowledge to ensure a certain level of understanding of the interdepartmental crisis management procedures.

In the post crisis phase the DCC ensures that all employees were individually trained in the skills that were needed for their role in the crisis management organization. When asked to the way of measuring development of employees by the DCC one of interviewees stated that:

*Crisis manager: Measurement is done by looking at the number of trained employees for a certain function in the crisis management team. A simple headcount is used.*¹²

A 'trained' employee is according to the interviewees someone who took part in a crisis management training provided by the department. There are no exams or tests that employees who work in the crisis management teams must pass to ensure that a certain learning goal has been reached. That implies that showing up and taking part in a training is enough to qualify for a certain crisis role. In practice the DCC arranges the crisis management trainings up to the needs of the employees. Letting employees participate in individual training programs shows that the DCC enables individual learning within the department. However, that only proves that the DCC uses the simplest theoretical form of learning to let employees learn 'something' from passed crisis and training programs. The answers of the interviewees of how learning is constructed led to indirect relations regarding the five theoretical processes of individual learning as discussed in the theoretical framework. What is meant with indirect relations is that learning does take place but either unintentional or intentional. The following section will elaborate on examples of processes of learning:

¹¹ Die mensen worden individueel opgeleid in eerste instantie. De interdepartementale crisisbeheersing opleiding krijgen ze allemaal. En ik wil dat ze allemaal opgeleid in de rol van informatie coördinator. Want dat is, weet je als je piket bent, je krijgt de informatie, en op het moment dat je piket hebt en we gaan opschalen dan schuif je eigenlijk als piketter het crisisteam in als informatie coördinator. Je hebt die positie al. Dus dat kan gewoon door. Uhm. En daarna is het op individuele basis of je mensen verder willen in die crisisorganisatie

¹² *Crisis manager*: Ik denk het aantal getrainde mensen voor een bepaalde functie, dus heel simpel headcount.

For example, if we take a closer look at the process of experimental learning which is acquired when DCC's operate day to day practices it can be both unintentional or intentional. Crises are the best example of unintentional experimental learning as learning takes place through recalcitrance. In practice, this process is about building experience in handling crisis which was emphasized by some interviewees as a highly important factor in the learning process for individuals as explained by the following quote:

Crisis manager: We started to integrate the picket duty into the learning cycle of our employees in being on crisis duty. Picket duty means that an employee must be 24/7 available to reach in the case of crisis. Prior to 2015 nobody really had experience with being called during that crisis duty as they only had crisis duty two weeks a year. Than building experience is quite hard. So we started to reinvent this process so that employees would have more chances to experience and learn in the role of crisis duty in an active way.¹³

This is a good example of enabling employees to learn at the individual level as from the moment the phone rings, they will be able to make sense by acting and experiencing the crisis. In the end the individuals will learn from that experience and retain the valuable information. Other examples are building experiences of employees that work in a crisis team during crisis. When employees have experienced earlier crisis they improve in acting in new crisis by using their prior experiences in crisis management to make decisions. *Experiential learning* at the individual level can also be simulated by organizing crisis exercises and simulations. However, budgetary and human capacity constraints limit the department of organizing these exercises according to the interviewees:

Crisismanager: Exercises, but it remains a difficult task to organize exercises within the department. First, someone says it is important but for the larger exercises nobody is willing to participate anymore. Than the key players (DG's) are suddenly busy and have other meetings. Secondly, exercises request for a lot of human capacity and budget to organize as they take a whole day or longer. So that is not a way to build up lasting knowledge as the frequency of exercises is too small¹⁴.

¹³ Nee, ik bouw het op vanuit de piketmedewerkers. We komen uit de situatie, ik begon in 2015 met deze klus. In het begin was er niks zeg maar, dat ben ik nu langzaamaan het, er was een hele rudimentaire piketregeling. Dat hebben we langzaam geprofessionaliseerd., het DCC had er 1, maar binnen de DG - ETM was er een heel rudimentair. Er waren wel mensen als die hadden piket. Dat werd een beetje gezien als een (Spreker wordt gebeld). Werd gezien als een corveetaak. Het waren eigenlijk alle managers die moesten 1 week die pikettelefoon meenemen. Ze waren met zijn twintigen. Als je dan één week doet, dan ben je er 1x in de 20 weken er één van. Nou dat is 2x per jaar. Dan bouw je dus niet echt een ervaring op.

¹⁴ Oefeningen, ik zeg het al in meervoud, maar het blijkt altijd een weerbarstig onderwerp om te kunnen gaan oefenen. Eerst zegt iemand dat het echt belangrijk is, maar voor die hele grote oefeningen krijg je de handen niet meer op elkaar. En

Another method of knowledge acquisition that the employees of the departmental crisis center of the Ministry were very positive about, was the third concept of *vicarious learning* which is related to the successes and failures of crisis organizations. It suggests that the DCC can learn by analyzing what happens to individuals when they engage during a crisis. By hosting evaluations after crisis incidents, the DCC can boost the learning process of individuals. The first step of learning after crisis is to make an evaluation report either internally or externally by the DCC. The interviewees all stated that the DCC has made *vicarious learning* a top priority within the department:

Crisis manager: Yes, that is good policy of the Ministry of Economic Affairs as than it always forces departments to recapitulate the events of crisis and discuss the decisions made. Not always are crisis evaluated externally, but is has only been something of the latest trend.¹⁵

External expert: One of the good points of the Ministry of Economic Affairs, especially the former Ministry of Agriculture departments – was that they had a culture in which every crisis had to be evaluated. Not everyone was always amused or happy with it, but because it was so clearly formulated in the handbook it was always done.¹⁶

A standard list of evaluation criteria is used to evaluate the crisis. Usually a questionnaire which was used in prior evaluations for comparison if needed. Only in case of a request of parliament for an evaluation, a new format is designed to meet up to the requirements of parliament. The most important issue in the process of individual learning is not however writing an evaluation report, but more the process of learning from these evaluation reports most interviewees stated. Especially when asked directly if evaluation reports were a proper learning tool in a political influenced organization:

External expert: You say it as it is. The evaluation is the tool, but not the goal of learning. Together we make the evaluation report and that forces us to jointly coordinate the process of evaluating. Because the report had to be written, we (the departments and employees who were involved in the crisis) had to work together in the evaluation. During that process of

als ze al georganiseerd worden, dan zie je vaak dat de sterspelers en die in een echte crisis er wel zitten en dan zijn ze ervan. Maar omdat ze heel arbeidsintensief zijn. En het kost heel veel tijd, je bent een hele dag ermee bezig.

¹⁵ Crisis Coördinator: Jazeker. Dat is wel een goed beleid van EZ, omdat er dan altijd wordt stilgestaan bij de handelingen tijdens een crisis. Niet altijd worden de zaken extern geëvalueerd, maar de laatste tijd wel. Anders doet de Auditdienst Rijk dat.

¹⁶ Een van de goede punten aan EZ is, met name door het oud LNV – deel was de cultuur om elke crisis te evalueren. Niet iedereen was daar altijd blij of gelukkig me, maar wij hebben dat omdat het zo duidelijk in het handboek en als DCC erachteraan zaten altijd voor elkaar gekregen.

evaluating we are active with learning, but it is needed that the department than takes it a step further to institutionalize to recommendations of evaluations¹⁷

But evaluation reports were not the best tool for learning from crisis as sometimes the findings in evaluation reports are not as firmly stated as they could be according to some interviewees. The political process of influencing the findings is present at all evaluations:

Crisis manager: I know that.... I wasn't involved with the last evaluation but that there was a lot of contact between the research team and our organization. For me, it looked that the results were framed a little to present a better picture than it was. Fortunately, it is the task of the (external) research team to determine what the conclusions will be after their research and not up to us. ¹⁸

However, individual learning is splintered within the Ministry as it 'is up to the director – general to facilitate the role of crisis management on the individual level'¹⁹. Employees can choose from a range of trainings to develop themselves further in crisis management. Table 6 shows the amount of different trainings that are open to follow by the employees of the DCC of the Ministry of Economic Affairs. The learning aim of the trainings was analyzed using the operationalization criteria of this research. That made it possible to distinguish the training programs in individual and group learning:

Learning Type	Amount of trainings that focus on type:
Individual learning	29
Group learning	16

Table 5: Trainings of the DCC of the Ministry split up to compare the focus of the training.

As already stated, the DCC offers these trainings to all employees of the Ministry which are provided by the National Academy for Crisis Management. The current choice of trainings of the NAC consists of 29 individual trainings and 16 trainings of the group type that are available for all crisis managers within Dutch ministries. The amount of individual trainings is considerably higher when compared with only the 16 team trainings that are offered:

¹⁷ Je zegt het eigenlijk precies goed. Het rapport is het middel, maar niet het doel. Samen maken wij een rapport en dat dwingt je om samen het proces van evaluatie in goede banen te leiden. Doordat er een rapport moest komen, moesten we samen het evaluatieproces in. En dan kan je ook wel echt actief bezig zijn met leren, dan moet je dat wel verankeren maar het helpt mee.

¹⁸ . Ik weet dat er uhm... daar was ik zelf niet bij betrokken bij de vorige vogelgriep evaluatie dat er heel erg veel heen- en weer gepingeld is tussen de onderzoeker ende organisatie. Dat had voor mij, ik keek er met wat afstand tegenaan. Ik kreeg een beetje het gevoel dat vanuit ons het mooier voorstellen van de situatie was, dan dat het was. En.... Dan merk je dat dat dat kenmerkt ook de onderzoeker

¹⁹ Maar binnen de DG – ETM was het heel rudimentair en afhankelijk van de DG.

Individual trainings	Team trainings	Trainings and Exercises with internal partners	Exercises with external partners
29 trainings	10 trainings	5 trainings	1 training

Table 6: Overview Total Training Program in numbers by National Academy for Crisis management

Source: Learning program National Academy for Crisis Management (in Appendix complete table)

The reasons for the difference between methods of individual learning and group learning were found in factors of organizational size after analyzing the process of group learning. These will be discussed in the following paragraph.

4.1.2. Group learning type

Group learning type was analyzed by asking questions about the form in which individuals were stimulated or enhanced to learn ‘something’ within teams from the current and passed crisis. In this way, tangible processes and methods were found that correspond with the *group type* of learning as discussed in the theoretical framework. Here, the research focused on the process of *integration* of learning within groups. How is knowledge bundled within the organization in order that individuals will have a shared understanding of the process of current and passed crisis?

Within the Ministry of Economic Affairs, the creation of a shared understanding of the crisis is achieved by evaluating all crisis. However, this is only achieved in groups of individuals who worked during the crisis and in the evaluation as one of the interviewees noted:

Crisis manager: Personally, I think the learning effect within the organization is rather disappointing. For example, last week on Monday there was major incident with an air force helicopter flying into electric cables. The incident was handled well and then the attention slights away. If it would have had negative consequences than we would write evaluation studies and so on. I think we should learn from positive incidents as well²⁰.

Another interviewee noticed that group learning is set up by the six trainings offered by the NAC, but also when individuals must cooperate during and after crisis. The team trainings that are offered are focused on for instance groups within the Ministry, but the Ministry works with a lot of external partners during crisis. Especially in the crisis caused by animal diseases, the Ministry decides what must happen at the local level where the partner organization NVWA is responsible for executing those

²⁰ Ik vind zelf dat het lerend effect van de organisatie wat tegenvalt. Uhm.... Is geen negatief waardeoordeel, maar je merkt dat. Neem heel simpel het incident van vorige week maandag [ongeluk met apachehelikopter. Oh het is goed opgelost, het is goed afgelopen. Volgende onderwerp. Dus daar kan beter van geleerd worden, om dat lerende effect vol te houden. Daar moeten we nog goed aan werken.

decisions. The problem here says one of the interviewees is that learning is not arranged with those external partner teams:

External expert: Yes, we can improve in stimulating the process of learning between teams and in teams. The organization of learning within teams is arranged most of the time, but between teams it isn't. E.g. with the avian influenza. Within the team of Agro it was arranged as they have some action points to work, but that doesn't mean that learning is arranged between the DG Agro and the NVWA. They haven't standardized learning or reflecting between those teams. I see great potential for learning between teams and their crisis networks²¹.

The interviewees proposed some ideas to create the sharing of knowledge and integrate that process in the organization by holding network meetings. However, if network meetings were the solution to close the gap within ministries and within their crisis network, most employees answered consistently that this was quite hard to achieve:

Crisis manager: Try to get the right people to those meetings than. That is impossible as it is not an urgent matter. Especially in teams where the pressure is high and the time limited. Then the learning cycle is tempered fast. However, those meetings do help.

Even if the Departmental Crisis Centre would like intercollegial sharing of knowledge to take place, they would have a hard job in overcoming the practical problems of time, budget and will. Most interviewees agreed on what the solution would be to enhance learning in groups within the Ministry:

External expert: The director – general should stimulate the learning process by involving himself in the process for example by putting 'learning points' of evaluation studies on the agenda of all the crisis teams within the Ministry, but also outside the department²².

One of the interviewees was clear in his statements about learning in and between groups. The director – general or someone in a leadership position must take responsibility for learning after crisis. For the Ministry of Economic Affairs this results in a strange situation as the departmental crisis centre does

²¹ Ja, dat zit hem met name in het leren binnen teams en tussen teams. Binnen teams hebben we vaak wel georganiseerd, maar tussen teams niet. Dus als voorbeeld bij de Vogelgriep: binnen het team van Agro, daar zit wel enige overdracht en die zijn bezig met hun actiepunten. Maar tussen de uitvoerder de NVWA en de DG Agro, daar is niet automatisch ook leren georganiseerd. En daar meer aandacht voor hebben. Ik weet niet precies hoe. Daar zie ik wel echt winst tussen organisaties en netwerk.

²² Je zet het op alle agenda's van alle crisisteams. Dan kan je als DG zeggen dat je in alle verschillende teams hetzelfde punt gaat bespreken.

not fall under one specific director – general, which means that without back – up from a director – general it is hard to implement these learning efforts in other teams²³.

The pivotal concept of *integrating* learning in the organization is thus dependent on the motivation of leaders within the Ministry. However, sometimes leaders are not involved in the work of the crisis organization as an example of one of the interviewees shows:

Crisis manager: After telling my supervisor that the team was involved in a large energy blackout exercise she found it interesting and started asking more and more questions about the work being done²⁴.

The main challenge of learning in groups in the Ministry of Economic Affairs is not that individuals are unwilling to create shared understanding of evaluation reports. It is the time devoted, available budget and the importance given to the problems. In crisis individuals counter problems by working together, but after the crisis is solved everyone goes their own way. Only when group type learning is re – established by organizing exercises and group meetings employees really train with working together in a group. These exercises are important to create a new opportunity to learn through shared understanding. Unfortunately, it is hard to organize these events due to time and budget limits.

However, department is working hard to establish more human capacity as the DCC has grown from 2 employees to 5 employees by January 1st of 2018. This should lead to a better focus towards specific needs at the individual and group level.

²³ Het is ontzettend belangrijk dat een DG-verantwoordelijkheid neemt om het DCC te helpen om dit binnen zijn eigen teams te implementeren. Als dat niet gebeurt, dan is het moeilijk om goed te leren in de crisisorganisatie.

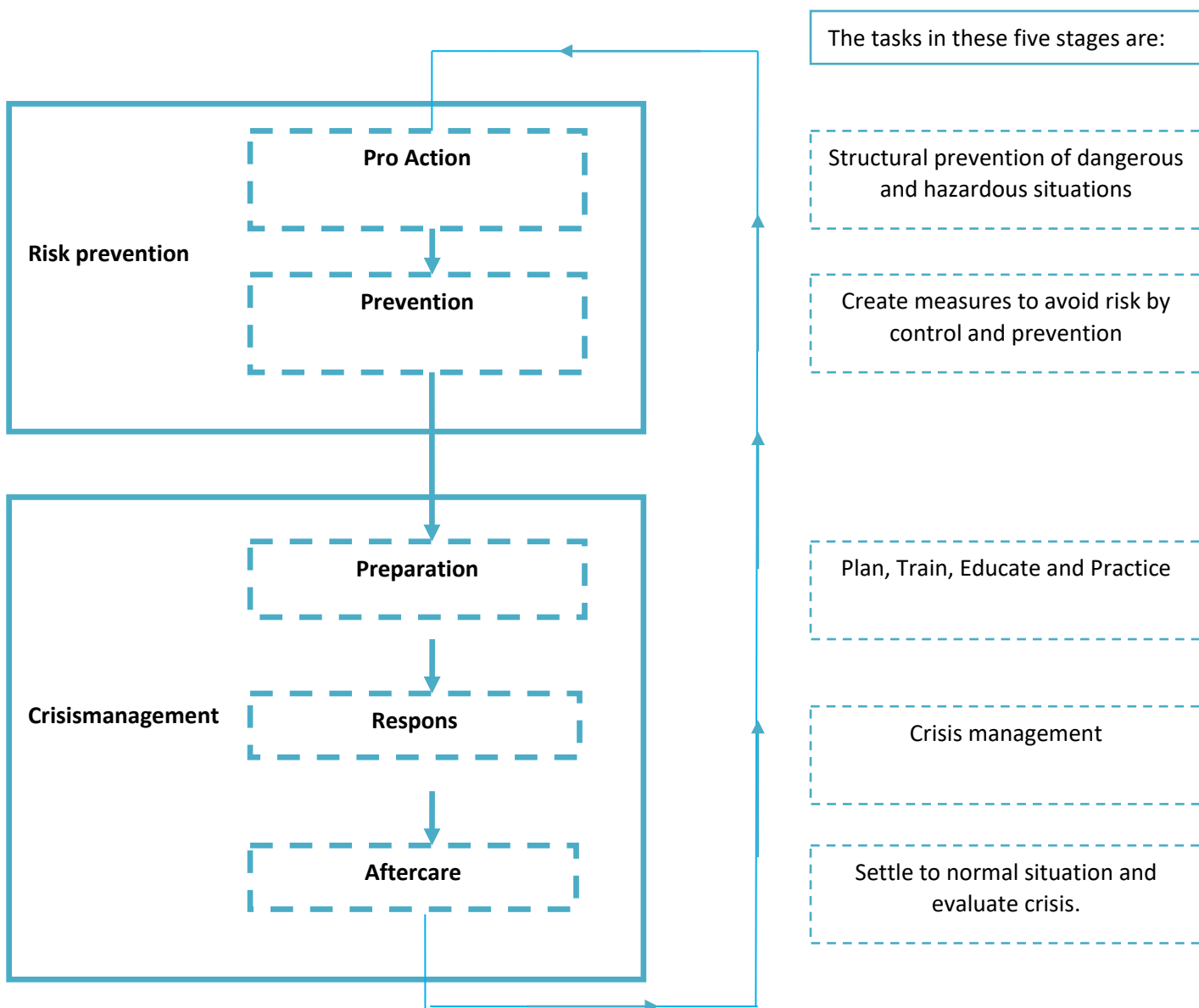
²⁴ En ik had net een discussie met mijn leidinggevende tijdens dat we die plekstart oefening aan het doen waren. Toen was zij op stap met de SG en toen was zij aan het vertellen dat we in die oefening zaten en daar was hij toch wel heel erg in geïnteresseerd

4.2. Case 2: Departmental Crisis Center of Ministry of Infrastructure and Water

The departmental crisis center (DCC) of the Ministry of Infrastructure and Water is responsible for the effective management of crisis and the integration of professional standards within the crisis management organization of the Ministry (Beleidsnota, 2014). As the Ministry is responsible for the maintenance, development and control of an important share of the Dutch infrastructure, crisis management is an important aspect of their task.

The departmental crisis center has the task to regulate and control the whole process of crisis management. The DCC has separated the cycle of crisis in two themes and five stages:

Table 6. Five stages of crisis management at the Ministry of Infrastructure and Water



Source: Expert interviews (see Interview II) and Ministry of Infrastructure and Water Management 2017

The Ministry of Infrastructure and Water deals with plenty of crisis every year as the wide policy area of the Ministry concentrates in a high risk for (small) crisis from accidents with chemical transportation, nuclear incidents to crisis caused by waterflooding. To ensure developing the capacity to learn of crisis within the organization, the departmental crisis center has written a policy paper for crisis management. The policy paper gives an insight in relevant developments in crisis management in and outside the Ministry. This plan is constructed in cooperation with twelve public partner organizations who contribute from their expertise e.g. the Delta commissioner, Coastal Guard, KNMI and the railway infrastructure company Prorail. Most of these organizations have been privatized, which means that the executive crisis management tasks were given to these organizations as well. The Ministry functions as a central player in the coordination between all these (former) public organizations. The aim of organizational learning at the departmental crisis center is to operate as a collaborative network that possesses the right focus and tools to counter crisis (Ministry of Infrastructure and Environment: 2014 – 2017: 5).

The departmental crisis center of the Ministry scales up the organization to a crisis organization about two times a month, which is a lot more compared to the DCC of the Ministry of Economic Affairs (4 times a year). A reason for this is that the policy territory of the DCC is quite large due to earlier mergers of policy areas in 2010²⁵. The time crisis lasts at the departmental crisis center ranges from one day to a maximum of two months. The responsibility to scale – up the crisis organization is given to the head of the DCC in cooperation with the director Communication of the Ministry and the director – general who is responsible for the policy area of the crisis²⁶. To guideline the discussed concepts of learning in the interviews, a brief overview of the theoretical definitions was provided to the interviewees.

4.2.1. Individual learning type

The first individual process of *congenital learning* takes place when employees take part in the interdepartmental crisis management training to ensure that they have a basic understanding of crisis management within the Ministry. At the individual level interviewees stated that their OTO program was the main learning tool to keep employees trained, educated and prepared. In the OTO program there is a vast distinction in basic education for all employees and more specialized trainings for civil servants working in different roles in the crisis team:

²⁵ ...het kabinet hiervoor VROM en Verkeer en Waterstaat. Dat is allemaal bij elkaar gekomen, waardoor ons terrein heel groot is. Dus ja, is gewoon een heel breed terrein, waardoor wij toch 2x per maand opschalen.

²⁶ Het hoofd van het DCC inderdaad in samenspraak met de directeur Communicatie van het Ministerie en de directeur – generaal die inhoudelijk verantwoordelijk voor de crisis waar die opgetreden is.

Crisis coordinator: We have trainings for the different roles in crisis management for example information coordinator, crisis manager e.g. And we have the basic crisis trainings of how to lead a crisis meeting and act according to a set of rules²⁷.

These trainings enable *experimental learning* for all individual employees. But according to one of the interviewees what distinguishes the Ministry of Infrastructure and Water from all the other ministries was that the department oversees many operational organizations that face (small) incidents every day. For instance, Rijkswaterstaat supervises all the highways and national waterways or their supervisory function for the Nuclear installations in the Netherlands. The different policy areas bring different responsibilities for the Ministry which means that the experts must be trained in the organization as well. Therefore, the departmental crisis center has set up 80 specialized training programs to ensure the knowledge is available in the organization:

Crisis coordinator: We have around 80 training courses and exercises within this department that we organize. That is an intensive program to keep everyone trained and ready for crisis.

Table 7: Overview Total Training Program in numbers by Departmental Crisis Center Infrastructure and Water

Organization	Individual trainings	Team trainings	Trainings and Exercises with internal partners	Exercises with external partners
	Individual type	Group type		
NAC	29 trainings	9 trainings	5 exercises	1 exercise
DCC I & W	17 trainings	2 trainings	2 exercises	2 exercises
Partner organizations	40 trainings	6 trainings	2 exercises	5 exercises

Source: Learning program NAC (2014), Policy letter Ministry of Infrastructure and Environment (2014) & OTO plan – WMCN Ministry of Infrastructure and Environment (2012).

After reviewing the underlying programs there were more than 80 different trainings that were provided to train the readiness of the organization. Table 7 shows the number of trainings and exercises split up by the type of learning: individual or group/team learning. Compared to DCC of the Ministry of Economic Affairs, the Ministry of Infrastructure offers many more trainings. The main reason for that difference is that the amount of policy areas differs and that the trainings of the Ministry of Infrastructure are also based on specialized operational crisis management roles rather

²⁷ Wij hebben een heel uitgebreid OTO-programma, dat bestaat uit basisopleidingen voor met name de BOB – methodiek, maar ook een heel scala aan roltrainingen en oefeningen waar wij medewerkers in kunnen opleiden.

than only on departmental general crisis management roles. In paragraph 4.3 the comparison between the budget and the amount of training programs has been made as this will contribute to answering the research question.

Another factor how the departmental crisis center is stimulating *experimental learning* in their (partner) organization(s) is to repeat safety procedures and learn from incidents and crisis by reporting all sorts of incidents. Small incidents from being stuck in the door to large incidents of collisions on the highway. The departmental crisis center has done this as repetition is successful in an organization that works 24 hours a day and 7 days a week:

External expert: Well, we bring learning back in the organization. On the hand safety within the organization for which we have installed plenty of procedures. Those all come back on the board agenda. We working to a situation that employees think from a situation: we do it safe, or we don't do it²⁸.

Aside from the extensive OTO program and *congenital and experimental learning* efforts, the DCC of the Ministry of Infrastructure focusses on *vicarious learning* by evaluating crisis. However, the crisis coordinator looked rather surprised when asked if all crisis incidents were evaluated:

Crisis coordinator: No, not every crisis. The DCC I & W is responsible to assess the necessity of an evaluation. Yes, of course we're not going to evaluate every crisis. That is impossible and unnecessary. It depends what kind of crisis it is and who wants it.²⁹

The reason for not evaluating all the crisis incidents is that the department deals with 24 crisis incidents on a yearly basis which takes too much time and budget to evaluate. Only with large scale crisis or demand from parliament/leadership, the crisis incidents are evaluated. Every crisis is however different and asks for a different approach to learn from in the political – institutional setting. The interviewees gave a clear view on how to deal with the specific need for flexibility in evaluating. Especially, regarding *vicarious learning* on specific themes of crisis:

Crisis manager: Well, what happens most of the time is that the responsible executive has specific questions about evaluations to ensure that the organization can learn from those

²⁸ Nou om het terug te brengen in de organisatie. Wij hebben enerzijds veiligheid binnen de organisatie, daar hebben wij hele melding rapportages voor. Die komen allemaal terug. Die komen zelfs op de directietafel. Daarin worden de simpelste onveilige situaties gemeld. En die worden bij ons op tafel gelegd, omdat wij dat belangrijk vinden. Dat gaat dan over de vraag: je doet het veilig of je doet het niet. Dit is al eigenlijk niet veilig (wijst naar de tafel).

²⁹ Nee, niet iedere crisis. Het DCC I & W heeft een zelfstandige verantwoordelijkheid om evaluaties uit te voeren. Ja, natuurlijk gaan wij niet iedere crisis evalueren. Dat kan eigenlijk ook niet en dat is ook niet nodig. Uhm... het hangt ervan af wat het is en wie het wil.

events (gives examples). Usually, we fit those questions in the evaluation framework and ask the evaluators to have specific attention for a theme or action³⁰.

By redesigning evaluation frameworks for political accountability, the *vicarious learning* process is influenced which could have negative consequences for the learning output. The interviewees stressed that the politicization on the *vicarious learning* process is part of the job. Here, the answer was straightforward and honest:

External expert: There is a lot of (external) pressure to do something with [evaluation reports], because it is all public nowadays. Even if we would like to as an organization, we cannot escape the reality of these evaluation studies³¹.

The next paragraph will focus on the group type of learning within the departmental crisis center.

4.2.2. Group learning type

At the group learning level, the questions were aimed at finding methods that correspond with the group type of learning. Most interviewees agreed that the individual and group level is highly mixed within the OTO program of the DCC. This study found that the current OTO program contains 28 trainings focused on groups. The crisis coordinator of the departmental crisis center thought that this was a good mix of individual and group learning and stressed that what makes the group trainings unique was that partner organizations were invited:

Crisis coordinator: Many people join the trainings as the ministry is quite large. A lot of these trainings are for teams. These trainings are also open for public – private partner organizations like Pro Rail, KNMI or RIVM. This helps that in case we need to cooperate with those organizations that they understand what our dilemmas are³².

³⁰ Nou, wat heel vaak gebeurd is dat uhm.... De directeur of de directeur – generaal of het Agentschap, of welke organisatie dan ook die verantwoordelijk is voor dat beleidsveld waar de crisis opgetreden is. Vaak specifieke vragen heeft over de evaluatie. Vaak past het er gewoon wel in of is het een extra aandachtspunt waar de evaluatoren dan gewoon aandacht voor moeten hebben.

³¹ En er ligt ook gewoon druk om daar wat mee te doen, omdat het ook gewoon zo openbaar is tegenwoordig. Al zouden we willen als organisatie, er is geen ontsnappen aan.

³² Veel mensen komen naar de trainingen omdat het ministerie vrij groot is. Dat zijn gewoon grote groepen van meer dan 10 man. Is ook open voor onze publiek – private partners zoals ProRail, naja noem ze allemaal maar op. Die mogen ook allemaal komen. Dan leiden we de mensen op, die wij echt ook nodig hebben in die crisisorganisaties. Dan moeten wij ook het RIVM of het KNMI,

This helps to in the process of *integration of learning* within groups and offers teams to learn over their own borders. The integration of learning within groups is stimulated by opening all these trainings for multiple teams instead of offering individual trainings. Another method of the ministry to *integrate* knowledge within groups is to organize crisis exercises. Partly, these are registered in the OTO plans of the Ministry, but can also be stimulated by leaders within the Ministry:

Crisis coordinator: Yes, crisis managers often ask for it [crisis exercise]. Sometimes it could also be asked by a new secretary – general or director who wants to lead a crisis exercise with this whole team³³.

The organizers of the exercises will then customize the scenario for the exercise to the needs of the 'client'. The interviewees referred to 'clients' which were all departments within the Ministry. These 'clients' will jointly set out learnings goals, discuss the scenario and will evaluate every exercise to improve future trainings methods.

In sum, most processes of individual and group learning are incorporated within the OTO – programs of both departmental crisis centers. The OTO – programs consist of individual and groups training, group exercises and provide a framework for evaluating (*vicarious learning*). The case analysis in chapter 4.1 and 4.2 focused on how the DCC's try to incorporate individual and group learning processes in their department. But what does the size of the DCC's matter for the availability, efforts and processes of individual and group learning? The next paragraph will focus on the influence of the size of the DCC's budget and human capacity on the availability of suitable learning programs.

4.3. The influence of budget and human capacity on learning within the cases

Some interviewees stressed the importance of budget and human capacity on the availability of trainings and exercises which are vital for the process of learning within the cases. As the DCC of the Ministry of Infrastructure and Water deals with more crisis than the DCC of the Ministry of Economic Affairs I expected that the annual available budget and the annual budget is higher within the DCC of Infrastructure and Water. One of the interviewees stresses that the DCC of I & W would have extensive funds for training capability as all OTO – funds are centralized³⁴

³³ het is vaak op... op verzoek van en in samenspraak met onze crisismanagers. Soms is het ook een nieuwe SG of een nieuwe directieteam, die zegt dat hij graag een crisisoefening wil met het nieuwe team. Nou, dan doen wij dat.

³⁴ Deels toch van die trainingen die het DCC geeft, want die hebben een pot met geld. Dat hebben wij allemaal niet meer zoveel. Daarnaast hebben wij ook gezegd... we moeten gezamenlijk een financieel potje hebben... nou dat hebben wij ook geregeld. Het gaat ook steeds weer naartoe dat wij het gaan centraliseren en meer zelf gaan doen.

External expert: Different organizations cannot fund their own OTO program. We use trainings of the DCC as they have a lot more money, so we are centralizing and that will be the trend for the future to organize more trainings³⁵.

The suspected larger budget within the DCC of the Ministry of Infrastructure and Water triggered this researcher to compare the DCC's budget with the budget of DCC of the Ministry of Economic Affairs. This resulted in the following table:

Budget Crisis-management	2012	2013	2014	2015	2016	2017	Average 2012 - 2017
Departmental Crisiscenter I& M	€ 2.608.000	€ 3.704.000	€ 4.264.000	€ 4.844.000	€ 3.902.000	€ 7.198.000	€ 4.420.000
Departmental Crisiscenter EZ	€ 6.700.000	€ 5.200.000	€ 6.300.000	€ 5.500.000	€ 6.000.000	€ 7.900.000	€ 6.266.667

Table 8: Comparison of departmental crisis centers budgets. Sources: Annual reports Ministry of Infrastructure and Environment (2013 – 2018) & Annual reports Ministry of Economic Affairs (2013 – 2018).

When the same comparison between human capacity was executed I found that the Ministry of Infrastructure and Water has more human capacity to organize trainings, evaluations and exercises: on average 4 employees within the DCC of EZ versus 11 employees within the DCC of I & W. These findings are rather contrasting as on average the budget of the DCC of the Ministry of Infrastructure is lower than the budget of the DCC of the Ministry of Economic Affairs. The smaller budget is rather surprising if you look at the amount of crisis the departments deals with and the amount of trainings the department offers, which are both higher than the department of EZ offers. For generalizing these findings, a statistical test had to be executed to check if the finding could be significantly proved. As the variables of budget (low and high) and type of learning (individual and group) were both coded as categorical variables, a crosstabulation was executed to prove whether the relationship between budget, human capacity and type of learning in this particular sample is also likely to be found in the wider population of crisis management organizations. The correlation was found not statistically proved as the likeliness of the correlation was 0,155 which is higher than the standard significance level of 0,05³⁶. These findings will be discussed in the following chapter of discussion and conclusion.

³⁶ See Appendix IV

5. Discussion and Conclusion

This thesis started with stressing the importance of learning after crisis. It analysed the focus on the type of learning in learning methods within departmental crisis centres. It might be important to stress that this study was not an attempt to measure whether the two cases had learned anything from a crisis. The concept of learning within public organizations was studied from an organizational learning type perspective. By first looking at the methods of learning within organizations such as evaluation reports and handbooks, it looked if factors of organizational size influence the learning methods that contribute to individual and group learning. In this chapter the findings of this research will be discussed. In the analysis, two departmental crisis centres were studied separately during this research project and will now be compared in this final part. After the assumptions have been discussed the thesis ends with an overview of the research limitations and recommendation for future research.

5.1. Discussion of results

Assumptions	Conclusions interviews
<p>Assumption 1: <i>Size and availability of budget in crisis management departments have a direct relationship on the amount of individual and group learning methods.</i></p>	<p>Partially accepted</p>
<p>Assumption 2: A2: <i>The number of employees working in a crisis management organization have a direct influence on the amount of individual and group type learning methods.</i></p>	<p>Partially accepted</p>

Table 8: Summary of conclusions of the assumptions

Assumption 1: *Size and availability of budget in crisis management departments have a direct relationship on the amount of individual and group learning methods.*

When reviewing the interview results from the DCC of Min EZ and the DCC of Min I&M, it became clear that both organizations focus their learning methods on different types within the organization. However, the methods of learning of both DCC’s were possibly related to the amount of budget. When looked at the amount of trainings which focused at the individual and group type of the organization it became clear that the Ministry of Infrastructure and Water has differentiated their training program far better with less budget to spend:

Organization	Individual trainings	Team trainings	Trainings and Exercises with internal partners	Exercises with external partners
	Individual learning type	Group learning type		
DCC Ministry EZK	29 trainings	6 trainings	2 exercises	1 exercise
DCC Ministry I&W	76 trainings	14 trainings	6 exercises	8 exercises

Table 9: Comparison amount of trainings and exercises used to learn from crisis within the Ministries

Interviewees stated that this was due to (1) budget, (2) the amount of crisis and (3) the number of staff the departmental crisis center of the Ministry of Infrastructure and Water has³⁷. However, the quantitative analysis didn't prove that budget is influential in all cases of crisis management organizations which makes it difficult to generalize the results.

A possible reason for the finding that the amount of training methods of the DCC I & W is much larger than the DCC of the Ministry EZ might be explained by the fact that the DCC I & W has more human capacity available. The explanation for the difference is that the budgets of both departments contain the funds for arranging physical crisis capacity, funds for the OTO – programs and administrative costs. That means that these budgets do not include the costs of the employees working in the DCC's as those costs are paid from the general budget of Ministry. The difference in amount of training methods can therefore be explained by the factor of human capacity as the DCC I & W provides most of the trainings themselves, while the DCC EZ has insufficient human capacity and is forced to spend more budget on outsourcing crisis management trainings and evaluations.

What this means for the assumption - that the availability of budget has an influence on the amount of learning methods aimed at individual and group learning - is that the assumption can only be partially accepted. Budget does have an influence on the amount of training methods and methods that can be deployed to stimulate learning within the organization, but it is not the dominant factor.

Assumption 2: *The number of employees working in a crisis management organization have a direct influence on the amount of individual and group type learning methods.*

In the analysis section the theoretical processes of individual and group learning were found in tangible learning methods such as evaluations and crisis trainings. This assumption studied if the number of employees working in a crisis management organization influences the amount of tangible learning

³⁷ Wat dat betreft weten we van elkaar wat we aan het doen zijn. Deels toch van die trainingen die het DCC geeft, want die hebben een pot met geld. Dat hebben wij allemaal niet meer zoveel.

methods. The finding that the DCC I&W has more crisis management trainings is dominantly explained by the fact that most trainings and exercises are given by employees of the Ministry of I & W. Small efforts to focus on group learning such as crisis simulation are mostly organized by employees itself. However, the quantitative analysis didn't prove that the number of employees is influential in all cases of crisis management organizations which makes it difficult to generalize the results.

5.2. Conclusion

This thesis has come to an end and it is time to conclude the results and findings. First, the main research question will be discussed which will be finished with answering the main research question:

RQ: To what extent does the size of Dutch departmental crisis centers influence individual and group crisis management training efforts?

The results show that organizations have divided their learning objectives of crisis management in the departments at different types of learning. The factors of organizational size influence the choices to provide individual and group learning trainings only if the factors support each other. That means that when an organization has a high budget and low human resources, than the amount of individual and group trainings is lower than when both factors are high. The factor of human resources play an important role in supporting group type of trainings as these are more human resource extensive than individual type trainings.

However, the findings do not support any statistical evidence of a permanent dominant correlation with the factors of organizational size. That means that other factors influence the choices that are made within the ministry to design the learning strategy of the DCC's after crisis. Learning by different types seems to be rather dependent on factors of responsibility, time and budgets. These other confounding factors were proposed by the interviewees and raised new questions regarding the link between organizational size and the individual and group crisis management training. These will be discussed in paragraph 5.3 with the limits of the research and future research options.

5.3. Limits of the research and future research options

This study aimed to study how organizations draft their learning process and especially considered the focus on the type of organizational learning within public organizations. This study looked at current policies and experiences of interviewees. But what it did not consider was **the willingness of leadership to take responsibility** to enroll in learning of crisis management. According to all interviewees this is vital in giving focus to the organizational learning process:

Crisis manager: But the attention of the director – general is very important to me. Here we have a world to win and he must know what our efforts are. We have done a very good job and sometimes things go wrong. It is important that the Director – General supports us than. Luckily, the current Director – General is like that³⁸.

Crisis coordinator: Leadership must take responsibility in learning within the organization. If the director – general is disinterested in crisis management than we will not proceed.³⁹

A lot of research has already focused on the willingness of leadership to improve, as Smith notes that only after visible crisis when political and legal authorities demand change, learning will occur (Smith & Elliott, 2007: 527). However, most interviewees indicated that learning does already occur as it is incorporated in the ministry by the establishment of departmental crisis centres who try to facilitate learning in the organization. Future research should consider the impact of the willingness of leadership on the entire department/organization. During the interviews it became clear that all the employees who work at the departmental crisis centres are intrinsic motivated people who take responsibility for their actions and want to learn and improve. However, politicization influences the willingness by leadership and has some impact on the learning effort by their employees. Future research should consider the relation between the willingness of leadership to stimulate learning and the actual output in the learning effort.

A second limit of this research was that it only interviewed crisis managers, coordinators and experts who worked with crisis in their daily work. It did not interview director – generals and other high management civil servants who are responsible for their department. Organizational change must be carried out through the whole organization from top management level to the employees who work in the actual crisis at operational jobs. This could have given insights in other factors that play a role in organizations focusing on the type of organizational learning. Time constraints and budgetary limits can be explained by looking beyond the actual programs and look at the underlying assumptions and reasons for the current organizational learning efforts and focus. It would be highly interesting if the framework of factors that influence organizational learning in crisis management organizations would be used to study both cases. This would clarify why the organizations focus their learning methods on individuals and groups. In future research, this could be done by interviewing more employees of both cases to get a clear view from all managerial levels of the organization.

³⁸ Maar ook het trekken van je DG. Die erachter moet staan, dit vind ik belangrijk. Hier hebben we een wereld te winnen en die moet je ook gewoon het verhaal. We hebben hartstikke ons best gedaan. Dit is er niet goed gegaan en dat hij niet boos wordt. Zo'n DG hebben wij op dit moment, dus we moeten dat echt gaan gebruiken. De vorige stond er wat anders in.

³⁹ De DG moet echt verantwoordelijkheid nemen voor leren in de organisatie. Anders gaat het niet gebeuren.

A third remark for future research is to study organizational learning in crisis management from an individual view instead of researching it from an organizational view. Currently learning is a quite voluntarily option within both cases and it is up to civil servants to determine which courses they take⁴⁰. However, a survey study into the motivations and ambitions of civil servants/employees regarding learning in crisis management could bring new insights in the potential of an organization. For example, one of the interviewees stated that his employees had an average age of 55+ which could indicate that employees will not develop any further⁴¹. In terms of experience these employees are highly valuable, but in terms of learning potential and knowledge retention in the organization it could bring new insights in the long – term learning capability of organizations.

A final remark for future research is solely valid for departmental crisis centres and that is that the influence of cabinet changes on the organizational learning process of Ministries was not considered for this study. This research has ignored the changes due to split up of the Ministry of Economic Affairs into the Ministry of Economic Affairs and Climate and the Ministry of Agriculture in October 2017. The departmental crisis centre - that facilitates learning of crisis – must now serve two Ministries. At first the impact of the split up is not visible, but in the end it means that the responsibilities are even more scattered. Employees who worked at one Ministry now work at the other due to the split up, resulting in a loss of knowledge in the other Ministry. This research has ignored the split up as the formal process still has to be shaped, but the result is an organization that must re – invent itself resulting in a shift in focus from crisis management learning to organizational crisis management design. Future research can shed led light on the impact of departmental changes for the crisis management departments.

Despite this study hasn't found any significant evidence of a relation between organizational size and individual and group crisis management training efforts, the subject learning efforts by organizations still needs a lot attention. Learning within crisis management organization is important for organizations and for society and more research is needed to understand and contribute to organizational learning within crisis management organizations.

⁴⁰ Except for the mandatory interdepartmental crisis management course

⁴¹ daar hebben wij natuurlijk wel last van, gecombineerd met de leeftijdsopbouw van Rijkswaterstaat. Dat is gewoon wel een dingetje. Maar daar is iedereen ook wel van doordrongen. We hebben een probleem met operationele diensten: 55+ mag geen nachtdiensten meer draaien. Weet je, maar als je zegt van braindrain

6. References

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Appendices

The appendices have been handed in separately and are in the possession of the supervisor.

Appendix I

Appendix II

Appendix III

Appendix IV