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**Learning from experience within
the Norwegian Army**

*Comparison of learning processes during the operations
in Afghanistan (2005-2012) and the exercise Trident*

Juncture (2018)

Marcel Wassenaar

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Preface

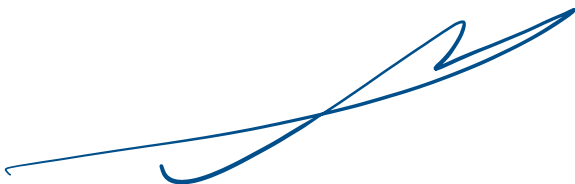
Armed Forces must be able to operate in a Darwinian environment, in which swift adaptation to ever changing situations is key to success. The fundamental driver to such adaptation is experience, both from within the organisation and from external sources such as allied, neutral and opposing forces.

The active collection of those experiences, their thorough analysis and the agile implementation of vital modifications form a learning process that constitutes a critical competence for every army.

However, I found that outcomes of external research as well as the Norwegian Army's own personnel often displayed great scepticism regarding the quality of that competence. During the process of writing this thesis I realised that this scepticism was not fully justified, although there is room for further improvement. The conclusions from this thesis can contribute to this.

It was a pleasure to write this thesis, not in the least because the colleagues at the Norwegian Defence University College in general and my tutor, Ms Torunn Laugen Haaland in particular, have been providing me with highly valued support. I gratefully thank them for that. Furthermore, I would like to thank the Norwegian Army Command, and especially Lieutenant Colonel Geir Husby, for providing me with the opportunity to use precious time and resources on this project.

Oslo, May 15th, 2019



Marcel Wassenaar
Lieutenant Colonel
Dutch Exchange Officer at the Norwegian Army Command

Summary

Both NATO and the Norwegian Government consider it of crucial importance for armed forces to actively learn from experiences, gained during operations and exercises. The armed forces that are able to effectively learn quickest will have a significant advantage over their opponent(s). This thesis identifies and explains differences and similarities in the processes used by the Norwegian Army to learn from experiences during its operations in Afghanistan in the period from 2005 until 2012 and during the exercise Trident Juncture in 2018.

The comparison of the two cases is based on an analysis of previous research, related to the Afghanistan period, on a series of interviews with personnel throughout the Norwegian Armed Forces' and Army's hierarchies and on a study of relevant orders and documents.

In both cases, there was no organisation-wide lessons learned process present within the Army that was specific or detailed enough to be used throughout the whole of the organisation. However, case-by-case guidance initiated at the level of the Norwegian Joint Headquarters and tailor-made to the operation or to the exercise, was issued. Generally, this guidance was quite effective but there were differences in its reach. In Trident Juncture, the Norwegian Joint Headquarters used the peacetime chain of command, involving also the Norwegian Army Command and Brigade North. In the Afghanistan period, using the mission chain of command, guidance was given directly to the battalion level. Subsequently, the involvement of the Army Command and Brigade North in those lessons learned processes was significantly less.

Furthermore, it proved to be challenging to compare previously identified lessons with new lessons, predominantly because a usable (database-) system to support such analysis was lacking.

Finally, committing personnel to lessons learned processes, either on a dedicated position or as an appointed officer with primary responsibility besides the regular job, enhanced the conduct of lessons learned processes noticeably.

Improving knowledge of lessons learned processes throughout the Army's hierarchy could further enhance the formalisation, and with that the capability, of learning from experience.

Sammendrag

Både NATO og den norske regjeringen anser det som avgjørende for væpnede styrker å aktivt lære av erfaringer, oppnådd under operasjoner og øvelser. Det forsvaret som er i stand til å lære seg raskest, vil ha en betydelig fordel over motstanderen sin. Denne masteroppgaven identifiserer og forklarer forskjeller og likheter i de prosesser som den norske Hæren har brukt til å lære av erfaringer under sine operasjoner i Afghanistan i perioden mellom 2005 og 2012 og under øvelsen Trident Juncture i 2018.

Sammenligningen av de to sakene er basert på en analyse av tidligere forskning relatert til Afghanistan-perioden, på en rekke intervjuer med personell gjennom Forsvarets og Hærens hierarkier og på en undersøkelse av relevante ordrer og dokumenter.

I begge tilfeller fant det ingen erfaringshåndteringsprosess i Hæren som var spesifikk eller detaljert nok til å bli brukt gjennom hele organisasjonen. Det ble imidlertid utstedt spesifikk veiledning fra Forsvarets operative hovedkvarter. Veiledningen var skreddersydd til hver operasjon eller øvelse og generelt sett ganske effektiv, men det fant forskjeller i rekkevidde. Under Trident Juncture brukte Forsvarets operative hovedkvarter den vanlige (freds)kommandokjeden, som også involverte den norske Hærstaben og Brigade nord. Under Afghanistan-perioden ble veiledning gitt direkte til bataljonsnivået. Dermed var involveringen av Hærstaben og Brigade nord i erfaringshåndteringsprosessen betydelig mindre.

Videre viste det seg å være utfordrende å sammenligne tidligere identifiserte og analyserte erfaringer med nye, hovedsakelig fordi et brukbart (database-)system for å støtte en slik analyse manglet.

Til slutt var en tydelig konklusjon at å tilvise personell til erfaringshåndteringsprosessen, enten i en dedikert stilling eller som utnevnt offiser i tillegg til den vanlige jobben, forbedrer gjennomføringen av prosessen betraktelig.

En fordypning av kunnskapen om erfaringshåndteringsprosesser gjennom hele Hærens hierarki kan forbedre formaliseringen av læring fra erfaring, og dermed læringsevnen, ytterligere.

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1. Introduction

History has demonstrated repeatedly that success now and in the next war may depend on how well we capture the best practices from the current fight, harvest the durable knowledge, and integrate it into our doctrine.

Lieutenant Colonel (ret.) E.J. Degen, U.S. Army

Wednesday, the 17th of January 2018. Almost sixty students at the Norwegian Command and Staff College are following a lecture on the Norwegian Armed Forces' (NAF) lessons learned process. A central hub within this process is FERDABALL¹, a database program meant to register and archive lessons learned within the Norwegian Armed Forces. The majority of those nearly sixty students, all with a long career within the armed forces behind them, had never heard of FERDABALL before. Those who did had no trust in it²...

Ten years earlier, in 2007, the Norwegian Government directed the Norwegian Armed Forces in a White Paper to develop a knowledge-strategy, in order to collect own and others' experiences on the tactical and operational levels and to process and analyse those experiences into lessons. Those lessons would be used to adapt doctrine, tactics and techniques, and would be imported in the Norwegian Armed Forces' relevant courses, training and exercises, and in the daily practice of its operational units (Norwegian Ministry of Defence, 2008, p. 126). In the ten years that followed the 2007-2008 White Paper, a number of additional guidelines were issued to implement a solid system for learning lessons within the Armed Forces, but how such a process should function in practice has never been fully described (Svinndal, 2015, p. 4). Something the senior students' reaction during that lecture on lessons learned processes clearly confirmed.

The importance for armed forces to learn from experience is not only stressed by the Norwegian Government. Also within NATO, the cornerstone of the Norwegian Defence Policy (Norwegian Ministry of Defence, 2016, p. 4), there is a strong focus on being able to learn lessons from experience to improve and to adapt:

¹ *Forsvarets ErfaringsDatabase Lessons Learned*, the Norwegian Armed Forces Lessons Learned Database

² The author was present during that lecture, as a student.

In an uncertain and continuously changing security environment, learning lessons to improve is an essential part of being credible, capable and adaptive in warfighting and warfare development. In a complex and rapidly changing security environment lessons need to be learned fast.

(Bi-Strategic Command Directive 080-006 Lessons Learned, NATO, 2018)

The ability to deliberately learn from experience is for armed forces even more crucial than it is for most other organisations. Most organisations learn in order to perform better at a certain task in comparison with competition or in comparison with certain norms and standards. A mobile phone manufacturer for example aims at producing a better product, as perceived by consumers, and at selling it at a lower price-point than its competition. The competition tries to do the same. A hospital aims at delivering higher quality healthcare at a lower cost in order to effectively provide better care for more patients. For armed forces however, the aim is to perform better at tasks in direct confrontation with their competitors. Competitors that at the same time learns from their experiences, too. The armed forces that are able to learn from experience quickest, will have a significant advantage over their opponent³(s).

It can thus be concluded that both the Norwegian Government and NATO consider the ability to learn from experience as a crucial competence for armed forces to be successful. This leads to the theme of this thesis: organisational learning from experience. Its scope is limited specifically to the processes linked to learning lessons during exercises and operations within the Norwegian Army⁴, as they are (or are not) conducted in the recent past and in the present time.

1.1 Previous research

The topic of organisational learning has gained a huge increase in attention in the recent decades, starting from the late 1970's and intensifying since the late 1990's. This increase includes a stronger focus on studying learning in service organisations (Argote, 2013, p. V), such as armed forces. Adapting organisations to ever changing environments, learning lessons from experienced success and failure, and conducting experimentation to test future concepts have all become usual elements of driving an organisation (Argyris & Schön, 1996, p. xvii).

³ Where "opponent" is used, one can also read related terms such as warring factions, enemy, hostile parties, etc. For readability purposes, only one term is used.

⁴ A nation's army is generally that part of its armed forces that is specialised to operate in the land domain. Other parts of armed forces can for example be the navy, airforce or marine corps.

Especially between 2007 and 2018, there has been much attention to organisational learning within the Armed Forces, both from government officials and military institutions as from various researchers. Often, but not always, the conclusion was that the Armed Forces were not performing adequately when it came to exploiting their own experiences from exercises and operations (e.g. Haaland, 2016; Hennum, Eggereide, & Rutledal, 2010; Hennum, Rørvik, Dahl, & Rutledal, 2008). Other researchers concluded that although the processes within the Armed Forces were not established very thorough, the Armed Forces' units did learn their lessons, predominantly on the lower tactical levels (e.g. Weideman Eriksen, 2017, p. 16).

The ability of the Norwegian Armed Forces and their units to learn during operations in Afghanistan, from 2001 until the present day, has been studied extensively (e.g. Haaland, 2016; Nesheim, 2016; Svinndal, 2015). Seen from the perspective of conducting research on learning within a military organisation, it is a logical choice to study the deployments to Afghanistan. There, the military is set in a relatively new environment, often with new assignments and competition with unknown or uncertain capabilities, goals and objectives. Learning from experience and transferring those lessons to other parts of the organisation becomes even more crucial under such demanding circumstances than under regular peacetime conditions. Since the Armed Forces as a whole were involved in the operations in Afghanistan, the study of transferring lessons bottom-up through the whole of the hierarchy becomes possible, too.

In this thesis the previously conducted research, much of which is very relevant to the Norwegian Army's performance when it comes to learning from experience, is used extensively in order to examine its lessons learned processes.

1.2 Research question

The inducement of this thesis is based on two factors previously mentioned in the introduction. First, the personal experience of the author that about fifty professional officers with a long career within the Norwegian Armed Forces did not know what the central database-system for lessons learned within the Armed Forces was (FERDABALL), or even worse: that they perceived it as useless. Second, that research from the last decade often concludes that the Armed Forces and the Norwegian Army have not performed very well with respect to learning lessons from experience.

Aim of this thesis is therefore to identify whether the processes used by the Norwegian Army to learn from experience during the operations in Afghanistan and during the exercise Trident Juncture, more than five years later, differ from each other. What are the differences and similarities and how can they be explained?

The following research question will be answered:

What are the similarities and differences between the way the Norwegian Army and its subunits learned from experience during the operations in Afghanistan from 2005 until 2012 and the exercise Trident Juncture in 2018, and how can they be explained?

Like the operations in Afghanistan, the major exercise Trident Juncture in 2018 provided the Army and its units throughout the hierarchy with a situation that differed significantly from their peacetime environment. Furthermore, this exercise provided the Norwegian Armed Forces and the Army with a prime opportunity to conduct a structured lessons learned process. A process that can be compared with the one in use during the Afghanistan period.

1.3 Definitions

Before defining three different variations of lessons learned procedures, the concepts of process and procedure are described, followed by an explanation of the difference between formal and informal processes.

Process versus procedure

In this thesis, the terms process and procedure are used frequently. The difference between those terms is quite relevant. A process is defined as a series of actions or steps taken in order to achieve a particular end⁵, while a procedure is an established or official way of doing something⁶. The difference between the two is thus that while a procedure exists purposely a process can occur unintentionally.

⁵ <https://en.oxforddictionaries.com/definition/process>

⁶ <https://en.oxforddictionaries.com/definition/procedure>

Formal versus informal processes

A distinction is made between formal and informal processes. An informal process is a process that occurs without being described in advance while a formal process is a process that has been. Describing a process to formalise it can be as straightforward as including it in a unit's standard operating procedures.

The three forms of lessons learned procedures

Three different versions of lessons learned procedures can be distinguished: an organisation-wide procedure, a unit-level procedure and case-by-case guidance.

An example of an organisation-wide procedure is NATO's lessons learned process. NATO uses a clear definition of its lessons learned process, that can be used within this thesis as well:

A lessons learned process is a procedure for staffing observations arising from an activity and developing them into a lesson learned. (NATO, 2011b, para. 14)

The purpose of a lessons learned procedure is to learn efficiently from experience and to provide validated justifications for amending the existing way of doing things, in order to improve performance, both during the course of an operation and for subsequent operations. (NATO, 2011a, para. 0454)

Two elements within NATO's lessons learned process are worth naming here, because they are used in this thesis as well: the *lesson identified* and the *lesson learned*.

NATO defines a lesson identified as⁷:

A mature observation with a determined root cause of the observed issue and a recommended remedial action and action body, which has been developed and proposed to the appropriate authority.

NATO defines a lesson learned as⁸:

An improved capability or increased performance confirmed by validation when necessary resulting from the implementation of one or more remedial actions for a lesson identified.

⁷ NATO's Joint Analysis and Lessons Learned Centre (2016, p. 12)

⁸ NATO's Joint Analysis and Lessons Learned Centre (2016, p. 13)

NATO's lessons learned process is implemented top-down, and generally applicable to all NATO headquarters. In this thesis, the Army's lessons learned process is analysed on multiple occasions. It is defined as an organisation-wide procedure for staffing observations arising from an activity and developing them into a lesson learned. That procedure is formally implemented within the Army and applicable within all levels of its hierarchy.

The second form of a lessons learned procedure is a unit-level procedure. That form occurs when a unit has stated how to conduct lessons learned processes in its standard operating procedures or other steering documents. A unit-level procedure can be in place without an organisation-wide lessons learned process being present.

The third form of a lessons learned procedure is defined as case-by-case guidance. That form is applicable when an order is issued related to a specific event, describing how learning from experience related to that event has to be conducted. An example of such an event can be an exercise or a specific operation.

1.4 Limitations

Organisational learning is influenced by many factors. Various researchers identify for example the influence that culture has on the ability of an organisation to learn. This thesis does not deny the importance of culture, but its focus is solely on the existence of lessons learned processes, leaving cultural influences out of the equation.

This research does not aim at identifying the internal quality of the lessons learned processes within the Army. It identifies whether or not processes are in place, and if they are in place as a result of formal guidelines and routines. If a process is in place, it is not assessed whether or not the process is conducted successfully, or if it can be improved.

1.5 Structure of the thesis

The structure of the thesis follows the method of research, as it is explained in paragraph 2.1.

After this first chapter, chapter two shows the used method of research.

Subsequently, chapter three aims at developing a model that can be used to analyse the lessons learned processes as they occurred during the Army's operations in Afghanistan from 2005 until 2012 and during the exercise Trident Juncture in 2018.

In chapters four and five, that analysis is conducted on both cases respectively, followed by the comparison in chapter six.

Chapter seven concludes the thesis by presenting the conclusions.

2. Method of research

This second chapter provides insight in the used method, the research design, the types of used data, how that data is collected and how the research quality is guaranteed.

The method used in this thesis is the comparative case-study. This method is used to acquire a deep level of understanding on one or some in time and space limited objects or processes (Verschuren & Doorewaard, 2002, p. 169). In this thesis, the comparison is made between the Army's lessons learned processes during the operations in Afghanistan between 2005 and 2012, and its processes related to the exercise Trident Juncture in 2018.

The research has a strong open and inductive character: the data within this thesis is first collected, then structured and categorised and finally analysed.

2.1 Research design

The research consists of four phases (see Figure 2-1). In the first phase, using general theory on organisational learning and relevant military literature, a theoretical model is developed. This model must be suitable to systematically analyse the process(-es) used to learn from experience within all levels of the Norwegian Army.

In the second phase, the developed model is used to map the conclusions of previous research on the Army's ability to learn during its operations in Afghanistan in the period 2005-2012.

In the third phase, by using documents currently in use within both the Norwegian Armed Forces and the Norwegian Army and by conducting interviews with personnel involved in the lessons learned processes within the organisation, the current processes-in-use are analysed and mapped into the model. This is limited in time and space by examining the lessons learned processes as they were in use with respect to the exercise Trident Juncture in 2018.

In the final phase, the results of the second and third phase are compared and analysed, leading to conclusions and, where possible, to recommendations.

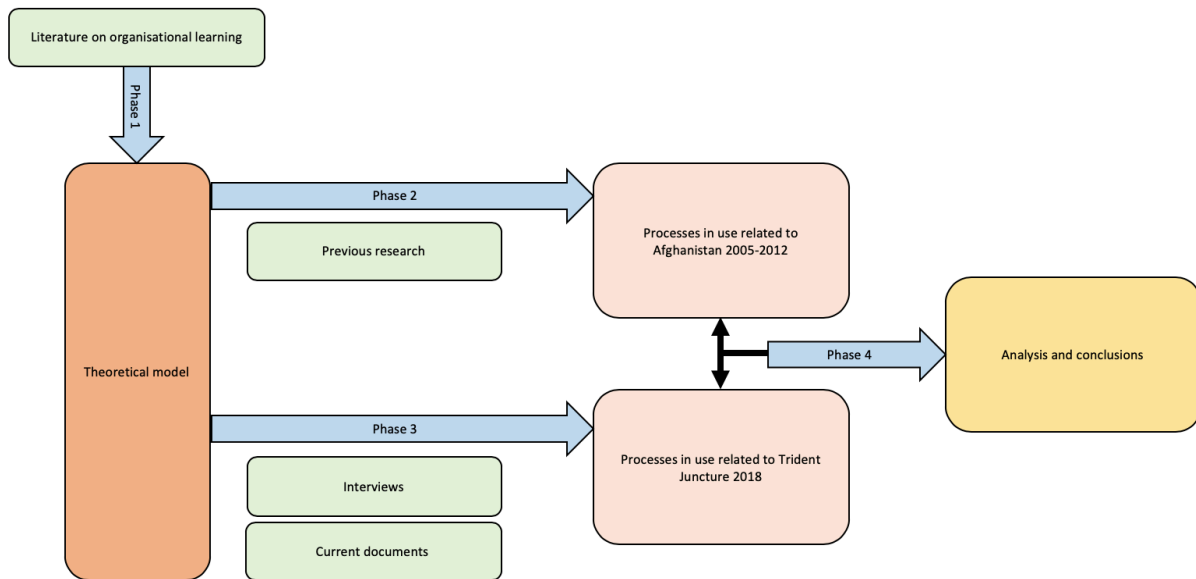


Figure 2-1: Research design

2.2 Collection and analysis of data

Following the thesis' research design (Figure 2-1), various types of data are used. In phase one, scientific literature from established scholars on organisational learning and military literature on the subject of learning lessons from experience, predominantly from NATO and the Norwegian Armed Forces, is used. Then, in phase two, recent research on the Army's lessons learned processes during the operations in Afghanistan is collected and mapped. Subsequently, in phase three, data related to the Army's lessons learned processes with respect to Trident Juncture is collected using interviews and documents from within the Armed Forces and the Army.

The analysis of data will be conducted following Miles and Huberman's matrix method (Swanborn, 1996). In this method, all data is registered in a temporarily "monster matrix". The matrix consists of categories and sub-categories, which are initially defined using the data that is found during phase one of the research. Further analysis of that data leads to a refinement of the used categories before the start of phase two and to the sub conclusions at

the end of phase two. In phase three, the matrix provides the basis for the questionnaire. Its analysis leads to the phase's sub conclusions⁹.

There are a number of software-applications available to help researchers developing and using such a monster matrix. In this thesis, however, the choice is made to use Microsoft Excel. A choice made due to limited resources, both in time to get acquainted with such software, as in budget to acquire software with sufficient reliability, quality and user-friendliness.

The research within this thesis and its use and storage of data is authorised by the *Norsk senter for dataforskning* (Norwegian Centre for Research Data¹⁰) and registered under project number 981644.

Interviews: sampling and questionnaire

The sampling procedure in a qualitative study is not as exhaustive as it would be in a quantitative one. Focus in this thesis is to interview personnel throughout the hierarchies of the Armed Forces and the Army that has or is expected to have a functional relationship with the lessons learned processes as they were in place during and after the exercise Trident Juncture in 2018.

The interviews were conducted with individuals in an open, semi-structured manner and had a duration of one to maximum two hours. Where possible, they were held at the office of the interviewees to minimise the context-effect, where the interviewee can be influenced by an “artificial” interview location and hence is inclined to give more “artificial” answers (Jacobsen, 2015, p. 152).

A questionnaire was used to structure the interviews, supporting the interviewer to ask the right questions without interfering too much with the informal setting of the conversation and without making the interview too pre-defined or overstructured (see Annex A: Questionnaire). In order to build trust and the right amount of openness, the interviews were conducted in a

⁹ Developing categories in this fashion is called *open coding* or *first-cycle coding*, followed by *axial-coding* or *second-cycle coding* (Jacobsen, 2015, p. 207)

¹⁰ <https://nsd.no/nsd/english/>

face-to-face setting instead of using means like chat, e-mail or phone (Jacobsen, 2015, p. 148). For the same reasons, the interviews were not recorded.

Notes were made by the interviewer during the interview. After the interview, those notes were transcribed, and the interviewees were given the opportunity to read through the transcription of their interview and to give suggestions for adjustment. This way, data quality and coherence is guaranteed to the maximum extent possible.

2.3 Validity, reliability and generalisation

Leung (2015) gives a clear description of validity in qualitative research:

Validity in qualitative research means “appropriateness” of the tools, processes, and data. Whether the research question is valid for the desired outcome, the choice of methodology is appropriate for answering the research question, the design is valid for the methodology, the sampling and data analysis is appropriate, and finally the results and conclusions are valid for the sample and context.

The theoretical model, developed in chapter three, aims at maximising the validity of the conducted research. Based on a strong theoretical foundation, and used to systematically define clear variables with related, highly usable indicators, it provides the foundation to both the interview questions and the structure of the used “monster matrix”, used to collect and analyse the data, and to answer the thesis’ main research question.

Here, a possible weakness within the thesis becomes visible. Using previous research as a source of data for analysing the conduct of lessons learned processes during the period the Army was conducting its operations in Afghanistan is not without risk. As opposed to conducting interviews, where the researcher can define questions tailor-made to the actual research, previous research is often conducted with other goals and methods in mind, making it possibly less usable or reliable. This risk is mitigated as much as possible in two ways. In the first place, the high amount of previous research enhances its usability substantially. In the second place, by using the model as developed in chapter three in a strict manner, relatively objective and reliable conclusions can be drawn.

Reliability is defined by the measure of replicability of the research: if the same research would be conducted a second time, using the same methods and sources, would the result be

the same too? Within qualitative research, this is hard to accomplish, yet essential to pursue. One factor that does guarantee a relatively high level of reliability, is the fact that this thesis seeks primarily for the presence of formal and/or informal (lessons learned) processes throughout the hierarchy of the Army and throughout the various phases of organisational learning. The search for such processes is relatively binary, since they are either present or not. This means that the research within this thesis can be conducted with a relatively high amount of reliability without implementing additional measures. One measure that was taken, though, is that the interviewees had the opportunity to read through the interview's transcript and to suggest changes before it was used within the research. This way, the reliability of the output of the interviews was further improved.

A factor that in theory could lead to a lower reliability is the relatively low number of interviews that was conducted ("small N"). Within most units, only one person was interviewed. The interviews were held with selected persons who had the most insight in the presence of lessons learned processes within that particular unit, minimising that issue: if those persons did not have any knowledge on the presence of formal processes, then it would be safe to conclude that they indeed did not exist. Interviewees were selected in three ways. In units where personnel was working in positions dedicated to lessons learned processes, the head of the respective office was interviewed (the Norwegian Joint Headquarters and the Land Warfare Centre). At the levels of the Army Command and Brigade North, it was the higher level that identified the persons that were assigned as officers with primary responsibility for lessons learned processes within those units. Finally, at battalion level, the head of the operations branch was selected. The operations branch is responsible for lessons learned processes at battalion level, as was confirmed during the interviews. Furthermore, it is not to be expected that the content of the interviews will have a negative impact on the interviewees' career or working sphere. This was assessed by the author in advance and discussed with the interviewees before or after the actual interview.

The author of this thesis is also working within the Norwegian Army, which can have advantages and disadvantages. One of the main disadvantages is that working within an organisation can lead to blind spots (Hecke, van, 2007), where one becomes biased, having one's former experiences influencing the findings of the research. Since the author had only been working within the Norwegian Army for about six months at the time of the start of the research, it is not to be expected that a possible "blind spot" will be of big influence on the

research. An advantage is the relatively easy access to the Norwegian Armed Forces (intranet) systems.

As Jacobsen states, it is often hard to generalise the results of qualitative research from a small sample to a larger population (2015, p. 237). In this thesis, the interviewees from the various units are expected to represent the whole of the unit, and to be able to give a clear overview of the processes related to lessons learned as they are or are not in use within that specific unit. In that sense, the result of one interview is generalised to the whole of the respective unit. Care has therefore been taken to select the right person to be interviewed. Generalising the conclusions of the thesis to be applicable to another army, or to another branch within the Armed Forces is expectedly not possible, but the model used to analyse the Army's lessons learned processes as it is developed in chapter three could be applicable as a basis for analysing the lessons learned processes of other organisations, too.

3. From theory to a model

This chapter aims at developing a theoretical model that can be used to systematically analyse the Army's lessons learned processes, both during its operations in Afghanistan from 2005 until 2012 and during the exercise Trident Juncture 2018.

In the first paragraph, organisational learning as a concept is untwined, defining four elements that are used to understand its theoretical basis. Then, Argyris' theory on single and double-loop learning is used to explain how the various levels within the Army's hierarchy are conceptually linked within the lessons learned processes. The third paragraph presents the model that is used within this thesis to analyse the lessons learned processes, including the operationalisation of that model. The chapter concludes by explaining how the phases of the learning process are categorised and labelled within this research.

3.1 Organisational learning unravelled

There is a wide range of possible definitions on organisational learning available in contemporary literature. According to Argote, however, most researchers agree that organisational learning is a change in the organisation's knowledge that occurs as a function of experience (2013, p. 31). This change is, or should be, not just focused on changing behaviour, but on improving that behaviour as well. Argyris and Schön (1996), for example, define instrumental learning as an organisation's improvement of its task performance over time.

Following Argote's definition, three elements of organisational learning are examined here: organisational knowledge, experience, and the process(-es) leading from experience to a change of the organisational knowledge.

Organisational knowledge

Argote states that knowledge within an organisation is stored within four elements: its members, its technology, its structure and routines and its culture (2013, p. 91). This is strengthened by Levitt and March, who argue that learning within an organisation changes the routines that guide its behaviour (1988, p. 320). Those routines generally include the same

aspects as Argote's definition of organisational knowledge. Some examples are knowledge, rules, procedures, conventions, strategies, technologies and culture.

Argyris and Schön (1996, p. 13) argue that the way an organisation conducts complex tasks also represents organisational knowledge. They use the term "theory of action", which describes the action-strategy the organisation perceives fit to follow in order to reach a desired end-state in case of a certain situation (if situation A applies, then action-strategy B must be followed in order to reach desired end-state C). Organisational knowledge does not only include the action-strategy to follow, but also provide answers to the questions what it is that makes end-state C desirable, and why the organisation assumes that given situation A, action-strategy B will lead to desired end-state C.

For armed forces, the ability to conduct a suitable action-strategy can be described as a *military capability*: the ability to conduct military tasks in order to reach a desired end-state. Within NATO, the following elements are often used to analyse and describe military capabilities: Doctrine, Organisation, Training, Material, Leadership, Personnel, Facilities and Interoperability, or DOTMLPF-I (NATO's Joint Analysis and Lessons Learned Centre, 2016, p. 44). This acronym has also been used by Hennem et al. to provide a list of areas that organisational learning within the Norwegian Armed Forces can stimulate improvement in (2008, p. 44).

Within this thesis, organisational knowledge related to the conduct of operations and exercises within a military organisation is defined as shown in figure 3-1.

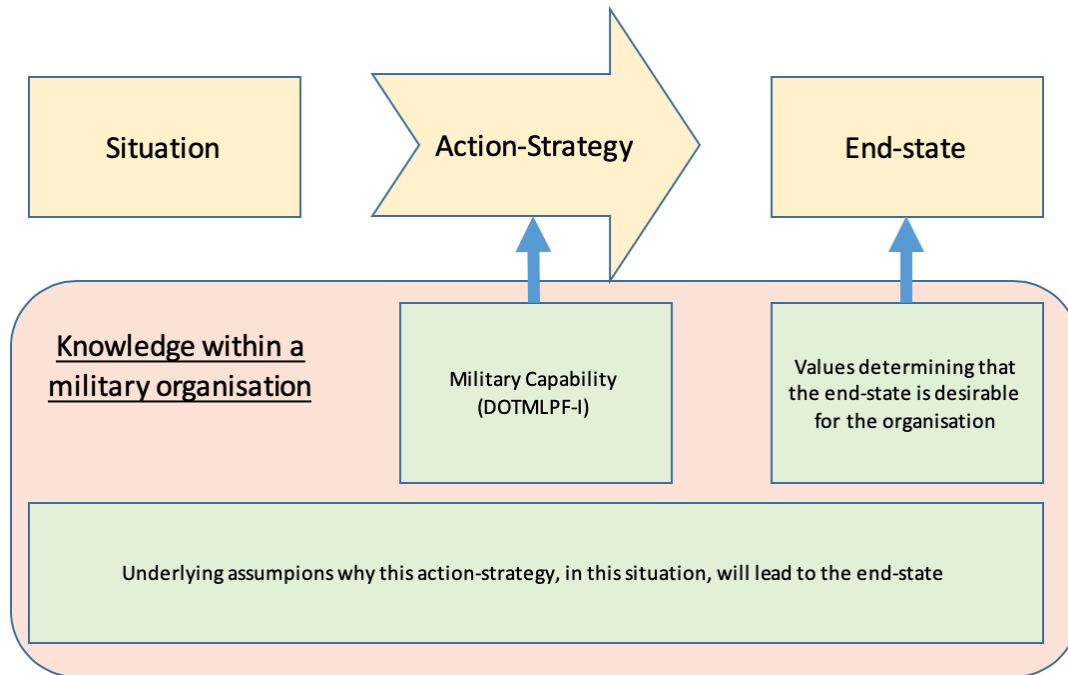


Figure 3-1: Knowledge within a military organisation

In this figure, one can see that for a military organisation conducting an operation or an exercise, organisational learning would involve the change of organisational knowledge, being one or more of the following:

- Element(s) within the DOTMLPF-I framework;
- Values related to the measure of desirability of the chosen end-state;
- Assumptions why the chosen action-strategy would indeed lead to the desired end-state.

Experience as a source for learning

Most scholars agree that experience forms the initiation of learning (e.g. Argote, 2013; Dewey, 1966; Nesheim, 2016). Experience can have many forms and can be analysed along many dimensions. A clear example of that is the distinction between direct and indirect experience: is it one's own experience or has it been experienced by someone else? Argote (2012) also distinguishes other possible variations between types of experience. Examples are success versus failure experience, easily interpretable versus ambiguous experience, experience from novel tasks versus from tasks that have been executed repeatedly in the past and the distinction that can be made related to the extent to which the experience has been simulated. A simulated experience can for example be the training of an emergency drill

within an office or a school, or the conduct of an experiment. One could argue that a military exercise is a perfect example of a simulated experience. Argote states that a simulated experience can be a valuable complement to real experiences, especially when that experience is scarce and/or the stakes are high. In the military, the real experience could be war, something that for armed forces involves very high stakes and is (fortunately) very rare, at least for the Norwegian Army.

An experience is formed when an individual understands the relationship between an action and its consequence (Kiær & Mørk, 2012). This implies that it is only the individual that can form experiences. As Kim (1993) argues, individual learning is a prerequisite for learning on the group- and organisational levels, because the organisation is composed of individuals and it is the individual that conducts tasks within the organisation. Here, a fourth relevant element of studying organisational learning is introduced: the level of analysis. This element is discussed in the next paragraph.

The level of analysis

As seen in the previous paragraph, learning within an organisation takes place on various levels. Most scholars identify the individual level, the group level, the organisational level (e.g. Kim, 1993) and the level above the organisation, which can be named for example the intra-organisational level (Argote, 2013, p. 20) or the systemic level (Weideman Eriksen, 2017, p. 9).

Although experiences are formed exclusively at the level of the individual, those experiences and learned lessons must be integrated within the organisation's mental model for organisational learning to occur (Hennum et al., 2008, p. 13). Here we see the link between the various levels: learning at the levels above the individual can only take place when experiences and lessons are transferred throughout those levels.

Defining the various levels within the Norwegian Army is less obvious than it might seem, but crucial to develop a theoretical model that can be used to systematically analyse its current lessons learned processes. The individual level is defined by the single employee within the Army. That employee can work within a unit, conducting highly technical tasks like patrolling an area as part of a small group or maintaining a main battle tank, but it can also be a staff officer working at the Norwegian Army Command who is for example involved in the

preparation of units to operations abroad. Employees from both examples form experiences during their work. Those experiences can lead to learning at the individual level, but also at the group or the organisational level.

It becomes difficult when trying to define the group and organisational levels within the Army. If we follow the definition of an organisation (Argyris, 1996, p. 8), we consider a group of individuals as an organisation when three conditions are met. First, there must be a boundary between the members and the rest of the world. Second, individuals must be given authority to act for the collective. Finally, there must be agreed-upon procedures for making decisions in the name of the collective. Argyris and Schön add that for an organisation to become relevant for studying organisational learning, it must operate on a continuing basis instead of being erected to reach a certain objective on a short term and subsequently dissolve upon reaching that objective¹¹.

If we would examine the Norwegian Army's units throughout its hierarchy, one distinction presents itself. Whether one would analyse a single eight-person group, a platoon, a company, a battalion, Brigade North or the Norwegian Army as a whole, one would find that each and every unit complies with Argyris and Schön's first and second condition: the members of the "first platoon" are clearly within other boundaries than those of the "second platoon", and its members are or can be authorised to operate on behalf of their respective platoons. The same applies to members of a company, a battalion, etc.

The third condition is harder to satisfy, yet it is very relevant for this thesis. It is about making decisions in the name of the collective of the respective organisation. In the previous paragraphs, we have seen that organisational learning involves changing the organisation's knowledge, and that for the Norwegian Army, that knowledge consists of the elements within the DOTMLPF-I-framework, the values related to the desirability of the end-state and the assumptions why an action-strategy would lead to that desired end-state, given the current situation.

Within the Army's hierarchical organisation, none of the levels is authorised to change all elements of DOTMLPF-I, but each level has the possibility to change at least some of them.

¹¹ Argyris and Schön use the example of a group of students mobbing against a university policy. It can adhere to all three conditions, thus being an organisation, without being an organisation we can study with regard to organisational learning. After the mobbing, this temporary organisation will probably disintegrate instantly.

Since organisational learning for a military organisation involves changing the values of the DOTMLPF-I elements, it is relevant to analyse what level is authorised to change which elements. Table 3-1 provides a refinement of the DOTMLPF-I framework into possible areas of change¹² and table 3-2 shows the various levels within the Army and to what extent each level is able to change (or directly influence the change of) the defined areas.

DOTMLPF-I element	Possible areas of change
1. Doctrine	1a. Conceptual guidelines, doctrine at the tactical level and above (e.g. FFOD ¹³)
	1b. Standard Operating Procedures
2. Organisation	2a. The structure of the organisation
	2b. The organisation's values and priorities
3. Training	3a. Training
	3b. Exercise
4. Material	4a. Main weapon systems / platforms
	4b. Low-cost material
5. Leadership	5a. Principles of leadership
	5b. Education of leaders
6. Personnel	6a. Education / courses
7. Facilities	7a. Buildings, simulators
8. Interoperability	8a. Cultural, technical and/or doctrinal interoperability with armies of other nations.

Table 3-1: DOTMLPF-I elements

¹² Inspired by the possible areas of change described by Hennum et al. (2008, p. 16), and the explanation on the various elements of DOTMLPF-I as given in the Joint Analysis Handbook (2016, p. 45).

¹³ Forsvarets fellesoperative doktrine, or the Norwegian Armed Forces Joint Operational Doctrine.

Area:	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	7a	8a
Level:													
Army Cmd	Green	Green	Green	Green	Green	Green	Yellow	Green	Green	Green	Green	Yellow	Yellow
LWC	Green	Green	Yellow	Green	Green	Green	Yellow	Green	Yellow	Yellow	Green	Yellow	Yellow
Brigade	Grey	Green	Grey	Green	Green	Green	Grey	Green	Grey	Grey	Yellow	Grey	Grey
Battalion	Grey	Green	Grey	Green	Green	Green	Grey	Green	Grey	Grey	Grey	Grey	Grey

<u>Legenda</u>	
Green:	Change at the respective level
Yellow:	Influence change
Grey:	Not able to change or influence

Table 3-2: Authority to change DOTMLPF-I elements

It is important to note that table 3-2 is based on the author’s experience within the (Royal Netherlands) Army. It was not possible within the timeframe and scope of this thesis to confirm all elements within this table. Furthermore, that would be a subjective exercise: some would for example argue that the brigade level does have strong influence on principles of leadership within the Army (5a in the table), while others would argue quite the opposite. The intention of presenting this table is to show that there are relevant differences in the amount of influence each level has. Especially between the level of the brigade and the levels above the brigade, the differences are significant.

Each level within the Army must be aware of two things when it comes to learning from experience. First, it must understand the amount of authority and influence it has to change the various elements of DOTMLPF-I. Second, it must know what level within the organisation is authorised to change those elements it is not able to change itself. That way, identified lessons can be send to the level with the proper authority without unnecessary and undesirable delays.

Learning processes: from experience to a change in knowledge

In the previous paragraphs, the three elements of organisational learning (experience, organisational knowledge and the level of analysis) were defined. In this paragraph, the process that turns an experience into a change of organisational knowledge is described, distinguishing between learning at the individual level and learning at the organisational level. Below, after explaining learning at the individual level, the link to the organisational level is made.

Kolb describes learning as the process where knowledge is created through the transformation of experience (1984, p. 38). An individual learns because it experiences and because it conducts reflection on those experiences. Dewey (1966) states that reflection is the discernment of the relation between what we try to do and what happens in consequence.

In this thesis, Kim's OADI-cycle is used: this cycle provides a clear and understandable link between learning within the individual and learning within the organisation as a whole. Kim describes that an individual: *Observes a concrete experience, Assesses that observation, Designs an abstract construct that seems to be an appropriate response to the assessment and then Implements that design into the concrete world* (1993, p. 39). Within the individual, this cycle leads to change. On the one hand, the individual learns how to conduct an action in a more suitable way to reach its objective or to conduct its task. On the other hand, it learns why that new action is an improvement over the old one, and why it thus leads to preferable results. Kim defines this as the difference between know-how and know-why, or between operational learning and conceptual learning. The combination of know-how and know-why forms the individual's mental model.

At the organisational level, one can also distinguish a mental model: the combination of the organisation's know-why and know-how. Examples of an organisation's know-why are its view on the world (or *Weltanschauung* as it is often referred to) and the organisation's perception of its role in the world. Examples of its know-how are its standard operating procedures and routines. The mental model of the organisation is influenced by its members' mental models. In fact, all individuals share their organisation's mental model. Kim therefore uses the term *Shared Mental Models* to describe an organisation's mental model (1993, p. 45).

Kim furthermore states that: *the strength of the link between individual mental models and shared mental models is a function of the amount of influence exerted by a particular individual or by a group of individuals* (1993, p. 45). In other words: the mental model of a person with more influence within the organisation, for example the CEO, will probably have a stronger influence on the organisation's shared mental model than an employee lower in its hierarchy.

Spector and Davidson claim that an organisation will only learn as long it is able to willingly manage the learning process (2006). Following Kim's model, however, any organisation will learn. Its members form experiences during the execution of their jobs. They assess the relationship between action and consequence and design and implement alternative actions as they consider required or possible. This is not necessarily a conscious process. Jarvis (2015) for example makes a clear distinction between conscious and unconscious learning from experience. The result, however, is the same: the person's mental model changes as a result of experiences. Depending on the role and the influence the person has within the organisation, its shared mental model will change accordingly.

As people learn from experience in conscious and unconscious manners, that same distinction can be made in the study of learning-processes within an organisation. Unconscious learning in this sense would be the change of the organisation's shared mental model without using any formal processes, just relying on Kim's OADI-cycle to take place. Conscious learning on the other hand would involve the organisation's formal, established processes aimed at learning from experience.

In the introduction of this thesis it became clear that the ability to learn effectively from experience is a crucial competence for armed forces to be able to defeat their competitors, something clearly stressed by both the Norwegian Government as by NATO. This implies that the Norwegian Army cannot rely solely on its "natural" or informal processes of learning as described above, but that it must deliberately use routines to capture the changes in the individual members' mental models and incorporate them into its shared mental models.

An armed forces' organisation-wide lessons learned process can be seen as an example of Popper & Lipshitz' definition of Organisational Learning Mechanisms (OLM): *institutionalized structural and procedural arrangements that allow organisations to learn non-vicariously, that is, to collect, analyse, store, disseminate and use systematically information that is relevant to their and their members' performance* (1998). This implies that the Army's lessons learned process should incorporate mechanisms focused on the collection of information, at the analysis of that information and at the storing of it. Storing in this context means transferring it into the army's organisational knowledge (or its shared mental model). The Army's lessons learned process should also include the dissemination of valuable lessons to other parts of the organisation. All this should be done in a systematic manner, guaranteeing a sufficient level of quality of the process.

Sub conclusions

It is the individual within the organisation that experiences, forming the start of the learning process. After observing the experience, an individual assesses it, reflecting over the relationship between action and consequence. It then designs an appropriate response to the assessment and implements it. This leads to a change in the individual's mental model, being both its know-how and its know-why, whether conscious or not. The change in the individual's mental model can lead to a change in the organisation's shared mental model. In this case, it is relevant how much influence the person has within the organisation.

This goes for any organisation, whether it willingly manages its learning processes or not. If an organisation seeks to learn actively, it will need routines, or Organisational Learning Mechanisms, that collect, analyse, store and disseminate lessons in a systematic way. For armed forces, this is a crucial competence.

3.2 Single and double-loop learning within the Army

Argyris and Schön have defined single and double-loop learning (1996). Single-loop learning occurs when learning within an organisation leads to a change of the action-strategy that aims at reaching the desired end-state. Double-loop learning leads to a change in the values related to the measure of desirability of the chosen end-state, and/or the set of assumptions why the chosen action-strategy would indeed lead to the desired end-state.

An example of single-loop learning for the Norwegian Army could be that it, based on an earlier experience, concludes that it needs additional long-range artillery-capacity in order to be able to successfully conduct combat against an expected opponent. In this example, learning would lead to a change within one of the DOTMLPF-I elements. An example of double-loop learning for the Army could be that it, based on experience, concludes that it cannot rely on the required support from the allied nations it assumed to receive to be able to defend Norway. Assumptions on which the initial action-strategies were based, have to be changed in the latter example, leading to major changes in the Army's perception of its means and goals. Double-loop learning is used to resolve issues that are difficult, embarrassing and threatening (Argyris, 1996, p. 81). Reflecting on years of scholarly experience within the field of organizational learning, Argyris (1996, p. 81) also states that:

It was rare to find organisations producing double-loop learning even when their survival depended upon it.

The last example, where the Army concludes it cannot rely on its allies is indeed quite extreme and would not only have military but also political implications. It is not hard to imagine that such a form of double-loop learning would not be conducted lightly. However rare it may be, the concept of single and double-loop learning can be used within this thesis to understand the relationship between learning at the various levels. A small adjustment of the concept would be required, though. Single-loop learning within this thesis is defined as learning where the level that conducts the analysis of an own experience has the authority to make changes in the relevant elements of its own DOTMLPF-I. An example of that would be a battalion that loses a battle during an exercise. The operations officer observes the experience, analyses the cause of the defeat and concludes that with a small adjustment of the doctrine-in-use, the next battle could be won (assuming that all other variables would remain constant). Following his job description as an operations officer, he is authorised to implement that change, which he does, closing the single-loop learning process. The lesson has been learned, since the experience has led to a change in the organisational knowledge of the involved unit in one single loop.

If that same operations officer would conclude that a change in the battalion's doctrine would not suffice, but that a change in its set of main weapon systems is required to be able to win the next battle, he would understand that he is not authorised to make the relevant change to the DOTMLPF-I. In that case, the experience needs to be brought up to the relevant level

within the armed forces that can authorise or directly influence the acquisition of new main weapon systems. That second step could be defined as an example of double-loop learning.

Following this reasoning there are two types of lessons possible within the Norwegian Army: lessons as a result of single-loop learning and of the defined double-loop learning. Haaland (2016, p. 1001), summarising various researchers, among which Theo Farrell (2010), defines learning within a military organisation in a comparable manner, distinguishing between adaptation and innovation.

The relevance of this distinction is significant within this thesis. In order to successfully conduct a formal lessons learned process, each level within the hierarchy of the Army should make a distinction between single-loop lessons and double-loop lessons, since the processing of the two types of lessons require completely different mechanisms. A single-loop lesson can be implemented at the respective level and transported to the higher and/or adjacent level, only to be disseminated further within relevant parts of the organisation. A double-loop lesson cannot be implemented at the respective level and needs to be transferred to the higher level, accompanied by sufficient information for the higher level to be able to analyse the lesson.

Furthermore, each level must be prepared to receive lessons from its lower level. There, it needs to analyse whether it is an already implemented lesson or not. In the first case, the analysis must focus on whom the learned lesson can be relevant for. In the second case, the respective level needs to actively work on implementing the lesson, or on transferring the lesson even further up within the hierarchy, until it reaches a level with sufficient authority to make the change, or to decide not to implement the lesson.

In order to successfully conduct a lessons learned process within the Army, each level within the hierarchy must thus be able to distinguish the difference between single and double-loop lessons and to act accordingly. It must be clear that the definitions on single and double-loop learning as used in this thesis are not important here: it is however crucial that the mechanisms as described above are used. Not differentiating between the two types of lessons could for example lead to haphazardly collection of lessons in a central database. If the organisation does not know what level is responsible for the implementation of an identified lesson, its reaction will most likely be to store it in a database “for later use”.

3.3 The model

In the previous paragraphs, the elements of organisational learning have been defined: experience, organisational knowledge, the process(-es) leading from experience to a change of the organisational knowledge and the various levels of analysis. Furthermore, it was argued that it is of crucial importance for the Norwegian Army to develop and sustain Organisational Learning Mechanisms (OLM), including mechanisms for the collection of experiences, the analysis and storage of them and the dissemination of valuable lessons to other parts of the organisation. Those mechanisms should include distinguishing between single and double-loop learned lessons and be present in a structured manner within all hierarchical levels of the Army.

Table 3-3 is used to support the analysis of the lessons learned processes as they are in place throughout the Army’s hierarchy.

Level ¹⁴	Phase within the process of learning			
	Collection	Analysis	Storage	Dissemination
NAC				
LWC				
BDE N				
BN level				

Table 3-3: Analysis of lessons learned processes

In this model, the individual level is not depicted. In the first place, processes can be in place within an organisation that lead to individuals taking action with regard to learning processes, but (formal) processes cannot be in place within an individual. In the second place, individuals are present within all layers of the Army’s hierarchy. It is those individuals that form the experiences, starting the learning process, disregard the level they are working at.

Operationalising the model

In order to be able to use the model to analyse the Norwegian Army’s lessons learned processes, more refinement is needed: it needs to be operationalised. In this thesis, that is done by defining variables within each phase of the learning process within the model:

¹⁴ See Annex B: Abbreviations

variables that can be used to define whether or not mechanisms are in place within that area. The defined variables are used to formulate questions in the interview guide and to analyse the collected data, by means of further refining the variables into indicators.

Here, the inductive character of qualitative research becomes apparent: the list of indicators had not been defined definitively before the interviews were conducted. The interview guide was adjusted where required as a result of earlier conducted interviews. During the various interviews, new indicators were found that have been incorporated in the model accordingly.

For most of the indicators, an additional question is relevant: is it part of a formal process or has it been embedded within the organisation or the unit on an informal basis?

Phase in the learning process	Variable	Indicators
1. Collection of experience	a) The unit collects its experiences from own personnel within the respective unit/level.	1. Conducted meetings related to experience (e.g. internal After Action Reviews, Post Exercise Discussions). 2. Internal standard operating procedures on how to report experiences.
	b) The unit induces its lower units to learn from experience using formal processes.	1. Existence of standard operating procedures or orders assigning lower units to learn from experience/conduct LL-processes.
	c) The unit collects learned lessons from own, lower units.	1. Existence of cross-level meetings within own hierarchy related to lessons learned. 2. Use of forms or documents to report lessons to the unit.
	d) The unit collects learned lessons from other (external) units.	1. Personnel visiting other units/seminars etc. to collect lessons. 2. Presence and use of professional literature and magazines.
2. Analysis of lessons	a) The unit actively conducts analysis on collected experiences.	1. Existence of resulting reports on lessons learned. 2. Specific defined roles within the unit on the conduct of lessons learned analysis.
	b) The unit distinguishes between single and double-loop lessons.	3. Different processes related to different type of lessons (single and double-loop).
3. Storage of lessons	a) The unit changes its organisational knowledge as a result of the experiences.	1. The unit actively changes elements of DOTMLPF-I, within its own authority.
	b) The unit forwards lessons that it cannot implement itself to the higher level.	2. Reports related to “double-loop” lessons, where the unit cannot change

		the relevant element of DOTMLPF-I by itself.
4. Dissemination of lessons	a) The unit shares lessons it learned from experience.	<ol style="list-style-type: none"> 1. The unit publishes articles showing lessons. 2. The unit organises or participates in seminars etc. 3. Reports sent in to the unit's higher level.

Table 3-4: Operationalising the model

3.4 Classification of the learning processes

In the following chapters, the operationalised model is used to label the various phases of the learning processes within the Norwegian Army, related to operations and exercises. Each variable is “scored” for each level within the organisation, thus filling Table 3-3. Three classifications are defined to grade the used variables, and to label each phase in the process:

- Low: there is no lessons learned process in place within the respective phase.
- Medium: there is a unit-level lessons learned process in place, but it has not been formalised within the unit's standard operating procedures or other steering documents.
- High: there is a formal, unit-level lessons learned process in place.

4. Afghanistan 2005-2012

The aim of this chapter is to identify and analyse the lessons learned processes as they were in place during the deployment of units of the Norwegian Army's to Afghanistan in the recent past. First, it gives an overview of previous research related to lessons learned processes within the Norwegian Armed Forces. Second, it shows the chain of command as it was in use during operations abroad, visualising the importance of that chain in relation to learning processes. After the analysis of the development of the organisation-wide lessons learned procedures within the Armed Forces and the Army, the chapter describes the actual processes for each level within the Army. The chapter ends with sub conclusions.

4.1 Overview of previous research

Chapter one states that a lot of research has been conducted on learning from experience within the Norwegian Armed Forces during the last decade(s). In Figure 4-1 that research is visualised, distinguishing between the various levels within the Norwegian Armed Forces and showing the period each research covered. Research that was directly related to operations abroad is marked with pink ovals, while the unmarked research was conducted outside the scope of international operations.

It can be concluded from the overview that most research related to operations abroad was conducted on the general level of the Armed Forces as a whole, on battalion and company level¹⁵ or on both. The latest research that covered the period in Afghanistan focuses on the period until 2012 (Svinndal, 2015). This chapter analyses therefore the Norwegian Army's learning processes during the operations in Afghanistan in the period 2005-2012.

¹⁵ During the operations in Afghanistan, the operational units were often not referred to as battalions or companies. It were however Norwegian units of battalion-size or smaller that were deployed. This research uses therefore the term battalion level to label the operational Norwegian units, deployed to Afghanistan.

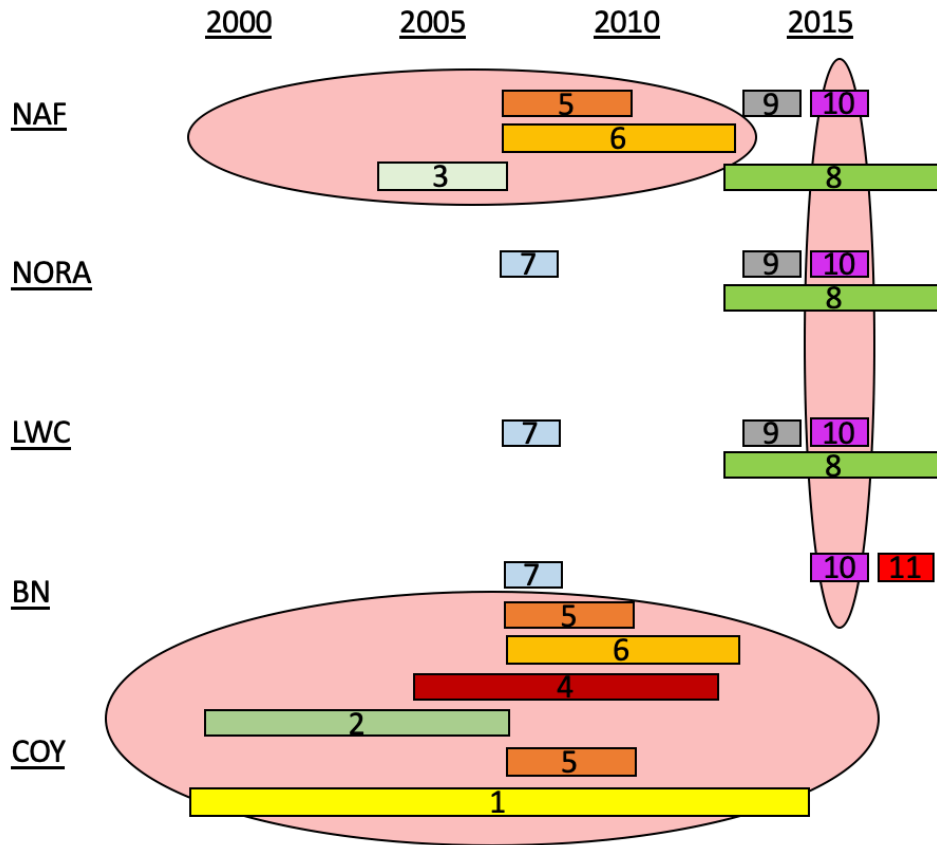


Figure 4-1: Overview of previous research

1. Isaksen, Kristiansen, & Møller, 2014
2. Heintz, 2009
3. Hennum et al., 2008
4. Nesheim, 2016
5. Hennum et al., 2010
6. Haaland, 2016
7. Kristiansen, 2009
8. Erstad & Folkestad, 2016
9. Norwegian Defense Staff, 2015
10. Svinndal, 2015
11. Weideman Eriksen, 2017

Legend	
NAF:	Norwegian Armed Forces
NORA:	Norwegian Army
LWC:	Land Warfare Centre
BN:	Battalion
COY:	Company
	Pink oval: Research related to international operations

4.2 The chain of command during operations

Identifying the chain of command is essential in understanding how learning from experience happens or should happen: experience and identified lessons often need to be reported bottom-up through the formal line. The chain of command during operations or exercises is

different from the standing, peacetime one. Figure 4-2 shows both chains of command, in a strongly simplified version.

During international operations like the ones the Norwegian Armed Forces participated in in Afghanistan, the Army composed and prepared the required operational units. Upon deployment to the operations area, those units were placed under command of the higher level within the area of operations, for example a regional NATO headquarters (in the figure depicted as “ISAF”¹⁶), while also residing under the Norwegian Joint Headquarters (NJHQ) in Bodø in a national command relationship. The Land Warfare Centre (LWC / TRADOK) supported the Army in preparing the units and in collecting, analysing and implementing lessons from the deployed units. The implication of this chain of command is that both the Army Command and Brigade North were in practice no part of the chain of command for their own units during the deployment of those units.

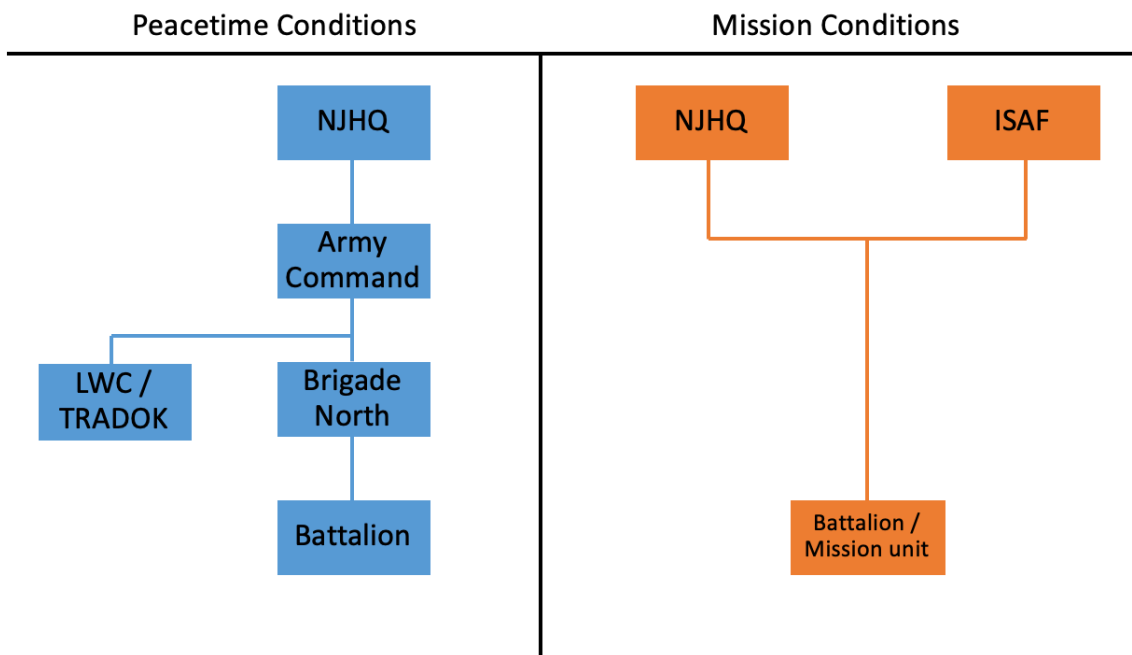


Figure 4-2: Chain of Command - Peacetime versus Mission Conditions

It is relevant to understand that this thesis only focuses on the learning processes in the Norwegian chain of command. In theory, the units should also have been participating in

¹⁶ ISAF, or International Security Assistance Force, was a security mission conducted by a large coalition of forces from 2001 until 2014. Mandated by the United Nations, ISAF’s primary objective was to enable the Afghan Government to provide effective security across the country and develop new Afghan security forces to ensure Afghanistan would never again become a safe haven for terrorists. As of August 11th, 2003, the mission was led by NATO (https://www.nato.int/cps/en/natohq/topics_69366.htm).

lessons learned processes within the chain of command of the operations area. In figure 4-2, ISAF should collect experiences from the Norwegian units as well, and those units should also disseminate learned lessons to ISAF. If and how this has occurred is not within the scope of this thesis. However, no indications were found that indicate ISAF actively collecting lessons from the Norwegian units.

4.3 Development of the Army's Lessons Learned Process

This paragraph provides an overview of developments within the organisation-wide lessons learned procedures within the Norwegian Armed Forces and the Army in the period 2004 until 2015. The overview focuses on two different periods. The first period, from 2004 until 2012, is relevant because the developments in that timeframe influenced lessons learned processes during the operations in Afghanistan. The second period, from 2013 until 2015, is relevant for this thesis to understand what developments have taken place from the Afghanistan period until the start of the exercise Trident Juncture in 2018.

Organisation-wide procedures from 2004 until 2012

As a result of the 2004 White Paper (Norwegian Ministry of Defence, 2004, p. 50), through a number of additional letters and directives, a centre for lessons learned was erected at the Norwegian Joint Headquarters in 2005 (Hennum et al., 2008, p. 20). The centre became responsible for the collection and processing of experiences from international joint exercises and operations, a task the centre still has in 2019¹⁷. In 2007 the first effects of the White Paper became visible within the Army as well when the Army Command ordered the predecessor of the Land Warfare Centre (the *Transformasjons- og doktrine kommando*, or TRADOK) to develop an own system for lessons learned, specifically for use within the Army (Norwegian Defence Staff, 2007 Appendix 3 to annex N, p. 8). First, TRADOK erected an own Section for Lessons Learned. From that moment on both the Norwegian Joint Headquarters and the TRADOK had a section with personnel dedicated to lessons learned processes. All reports from the Army's tactical units should be send to the TRADOK's Section for Lessons Learned (Norwegian Army Command, 2007, p. 4). It coordinated the analysis and implementation of lessons within various departments of TRADOK, and it described how lessons from training

¹⁷ The Headquarter's centre for lessons learned has been part of the Norwegian Defense University College for a short period of time. This did not influence the development of the lessons learned process as described within this chapter.

and operations that were time-critical needed to be addressed in a swift manner within the Army. It did however not order the Army's units to conduct their own lessons learned processes, nor did it describe how the units should disseminate their experiences to TRADOK. Guidelines were given, but a well-defined organisation-wide procedure did not come into place. In a report on lessons learned, dated 2008, it becomes clear that the section did use a significant amount of time and resources on lessons learned processes, collecting experiences, visiting operations and exercises and supporting the planning of future operations (Hærens transformasjons- og doktrinekommando, 2008, p. 5).

Within the Army, no additional formal guidance on organisation-wide lessons learned processes can be found until 2012. In that year, the Army distributed *Hærens utdannings- og treningsbestemmelser*, or the Army's Education and Training Directive. Its annex I (Lessons Learned) was a revised version of the 2007 edition (Norwegian Army Command, 2012). Hardly any changes were made, and within the Army that directive is still valid in 2019.

In the same period, the Norwegian Joint Headquarters issued guidance on learning from experience as well (Norwegian Joint Headquarters, 2011). Core element of this guidance was that learning from experience was a responsibility of commanders throughout the chain of command. Furthermore, the Norwegian Joint Headquarters' central role regarding lessons learned within the Armed Forces was reconfirmed. Again, the level of detail was quite limited, and well-defined organisation-wide lessons learned procedures were not implemented.

It can be concluded that within the Army, no organisation-wide lessons learned procedure was present in the period from 2005 until 2012, nor did the Norwegian Joint Headquarters provide detailed directions. However, guidance was given on a case-by-case basis, in preparation to operations abroad and larger exercises. Examples are the D+40 and D+180 reports that units had to deliver during and after their deployment to international operations (Vie, J., interview, 13 February 2019).

Organisation-wide procedures between 2013 and 2015

In 2013 the Chief of Defence issued own guidance on the Armed Forces organisation-wide lessons learned procedures (Norwegian Defence Staff, 2013). This time it was more detailed, ordering for example the Army (and other branches such as the Navy and the Air Force) to

dedicate personnel to support the operational lessons learned processes, to develop internal procedures adjusted to the own organisation and to make use of adequate means to support the processes, like databases and process management tools. Furthermore, it gave guidance regarding all phases of the learning process, from collection and analysis to storage and dissemination.

The most recent guidance on organisation-wide procedures related to learning from experience was given by the Chief of Defence in 2015. Based on an internal revision (Norwegian Defence Staff, 2015a), a few recommended measures were implemented. One of the recommendations was not implemented though: to update the Armed Forces' 2013 system for lessons learned. Main focus of the revision's implementation seems to be to leave the Army and the other branches as much freedom as possible to organise their own procedures¹⁸.

4.4 Lessons learned processes in practice

This paragraph compares the conclusions found in relevant previous research related to the actual lessons learned processes during deployment. Each level within the command structure is analysed, starting at the Norwegian Joint Headquarters. Each subparagraph concludes with labelling the processes within the different phases of the learning process, by using the classifications as defined in paragraph 3.4.

Norwegian Joint Headquarters

This thesis focuses on learning from experience within the Army. The level above the Army, the Norwegian Joint Headquarters (ref. Figure 4-2), is relevant in cases where processes within the Headquarters influence those of the Army. Within the four phases of the learning process, it is in collection and storage of experiences that the higher level has direct interaction with its lower level: it collects experiences from that lower level, and the implementation of identified lessons can directly impact the level below. The phases of analysis and dissemination do not require the involvement of that lower level. The influence the Norwegian Joint Headquarters had on both the Army as a whole and on the Army's subunits is therefore very relevant.

¹⁸ One example is the wish of the Chief of Defense not to implement a recommended measure because he did not want to "micromanage" the branches (Norwegian Defence Staff, 2015b, p. 3).

However, in practice the influence the Headquarters had on the Army as a whole was very limited. It could for example not direct the Army to implement a specific lessons learned procedure: it simply did not have the authority to do so (Nesheim, 2016, p. 35). Even if it would have developed more differentiated, context-dependent and refined systems for learning at the organisational level, as Weideman Eriksen suggests (2017, p. 16), it could not have forcefully implemented those systems within the Army. Furthermore, the Headquarters was not or to a very limited extent authorised to implement changes within the Army as a result of identified lessons from the operations areas abroad (Hennum et al., 2008, p. 23). This means that even if the Norwegian Joint Headquarters would have had effectively working, formal processes in use to implement change as a result of identified lessons, it would not have been authorised to do so directly within the Army.

The influence the Headquarters had on the Army's units during their deployment to international operations was larger, because the units formally resided under the Headquarters during deployment (ref. figure 4-2). The Headquarters tasked units to produce D+40 and D+180 reports¹⁹, which were collected both by the Headquarters and by the Land Warfare Centre. Those reports were the only formal means of written experience-sharing within the Armed Forces during operations in Afghanistan, which meant that a lot of information and lessons could have been lost, since they were not written down continually (Svinndal, 2015, p. 61). However, the D+40 and D+180 reports were part of a process that was described in a formal manner. Seen from that perspective, the Norwegian Joint Headquarters did have formal processes in use during the phase of collection.

Although the Norwegian Joint Headquarters did have influence on deployed units, the effectivity of the learning processes seemed to be low. Weideman Eriksen described that archiving [unit-level] lessons at the level of the Headquarters, such as in the database program FERDABALL, seems to have had limited added value (2017, p. 15). Moreover, Hennum et al. state that although the overall system for collecting and processing single reports was fine, the Armed Forces struggled when multiple reports had to be compared and analysed in a systemic manner over time (2010, p. 31/7). Even the level above the Norwegian Joint Headquarters, the Defence Staff, states that it experienced on a daily basis important lessons

¹⁹ The D refers to the first day of the deployment. The D+40 report is produced after being in theatre for 40 days, and the D+180 report after 180 days of the start of the deployment.

that did not fit in the system for lessons learned that was present at that time (Norwegian Defence Staff, 2015a, p. 16).

It can thus be concluded that the Norwegian Joint Headquarters' influence on the Army as a whole was limited. Its influence on deployed units of battalion level and lower was stronger, especially when it came to the collection of their experiences during the deployment.

Norwegian Army Command

The Norwegian Army Command's role is twofold when it comes to learning from experience within the Army. On the one hand, being the highest level within the Norwegian Army, it is responsible to direct its units to implement a lessons learned system or process. On the other hand, it is part of those processes itself, where it should collect, analyse, store and disseminate lessons from itself and its lower units.

It was not before 2007 that the Army Command issued guidance on the development of an organisation-wide lessons learned procedure within the Army, which was adjusted marginally in 2012. Before that period, there was no institution present that could collect and analyse experiences from operations abroad (Heintz, 2009, p. 67). According to Heintz (2009, p. 60), soldiers returning from missions abroad did not experience a systematic lessons learned process within the Army. Even after the directions given in 2007 and 2012, an internal revision of learning from experience within the Armed Forces showed that the guidelines within the Army were perceived to be not specific and practical enough for use throughout the whole chain of command (Norwegian Defence Staff, 2015a, p. 27). The system that was present did not describe for example that everybody within the Army was responsible to make sure that the Armed Forces could make good use of the experiences people gained (Bonnevie-Svendsen in Svinndal, 2015, p. 49). Thus, the Army Command did not or very limitedly implement a usable and sufficiently detailed organisation-wide lessons learned procedure within the Army.

The second role of the Army Command is its own role within the lessons learned processes in the Army. From the studied research it appears that the Army Command was not or to a very limited extent involved in the lessons learned processes (Norwegian Defence Staff, 2015a, p. 26). It was predominantly the Land Warfare Centre that was in the lead, with little involvement from the rest of the Army (Norwegian Defence Staff, 2015a, p. 26). Erstad &

Folkestad concluded that experiences that required material investments were generally easier to implement during operations than during peacetime conditions (2016, p. 48). That would imply that the role of the Army Command is even more important during operations, since material investments determine to a large extent the Army's future.

It can be concluded that the Norwegian Army Command did not have a formal role in any of the phases of the lessons learned processes related to the operations in Afghanistan. Evidence of the involvement of the Army Command in a more informal way has not been found in the researched literature as well. All phases in the learning process are therefore labelled as low.

	Phase within the process of learning			
	Collection	Analysis	Storage	Dissemination
NAC	L	L	L	L

Brigade North

Although Brigade North is part of the Army's command structure, neither in previous research nor in documents on formal guidance and direction, any indication or proof was found on Brigade North's involvement in lessons learned processes related to the deployment of Army units to Afghanistan. The processes in all phases are therefore labelled as low.

	Phase within the process of learning			
	Collection	Analysis	Storage	Dissemination
BDE N	L	L	L	L

The battalion level

In the period 2005 until 2012 a lot of different units were deployed to Afghanistan. They differ with respect to the organic unit they belonged to, to the unit's size during the deployment and to the set of tasks they had to execute. However, it is possible to distinguish a number of general observations from previous research.

The most distinct observation is that the lessons learned processes differed in between the various units (Erstad & Folkestad, 2016, p. 35; Hennem et al., 2010, p. 31/8; Nesheim, 2016, p. 48). Learning did take place, especially internally and from one unit's deployment to the

next. Units often conducted internal evaluation processes and after action reviews after operations during the mission (Hennum et al., 2010, p. 31/8; Nesheim, 2016, p. 37). Although Erstad & Folkestad (2016, p. 35) state that this variation can lead to a lack of interchange of experience in between Army units, the head of the Section for Lessons Learned at TRADOK comments that it was crucial that the local units implemented their own procedures for developing experience-based learning for learning to take place (Alvsaker in Kristiansen, 2009, p. 42). Furthermore, he stated that the overall guidelines for learning from experience could only become usable if they were of practical use to the units (ibid. 2009, p. 43). The fact that different units used different lessons learned processes can thus have had advantages, but it could also have led to problematic dissemination of learned lessons. Below, after examining the various phases of the learning process, the results of previous research are summarised.

Collection of experience consists of multiple variables (ref. paragraph 3.3): collection of experiences of own personnel, inducing subunits to learn, collecting learned lessons from subunits and collecting learned lessons from other units. The first variant took place frequently, for example through the after action reviews after specific actions, evaluations, weekly debriefings etc. (Hennum et al., 2010, p. 31/8; Nesheim, 2016, pp. 37, 40; Weideman Eriksen, 2017, p. 9). From the investigated documents, it did not become clear whether units also induced their subunits to conduct learning processes, or whether lessons from own subunits were collected. Units did however use a lot of effort to collect lessons from a specific type of “other unit”: the unit that was previously deployed to Afghanistan (Weideman Eriksen, 2017, p. 9). Often, this collection took place through informal networks (Nesheim, 2016, p. 38). In a formal sense, it was much harder to obtain learned lessons from previous units, and the reports stored in FERDABALL were almost never used for that goal (Heintz, 2009, p. 49).

Since a large number of processes occurred with regard to collection, and those processes were there in general on purpose, the collection of experience is labelled as high.

In the reviewed research, the difference between the phases of analysis and storage could not be found distinctly. It is therefore not possible to qualify those phases separately. It is however possible to analyse their results: the changes units made to DOTMLPF-I-elements and reports on lessons that the unit could not implement itself due to a lack of authority. According to Nesheim (2016, p. 46), learning did take place within the fields of manoeuvre, firepower, survivability, equipment and personnel. Svinndal (2015, p. 38) confirms this,

stating that the officers within the Army took their responsibility and came up with proposals for improvement [during operations], especially with respect to operational technics and combat drills. Weideman Eriksen (2017, p. 12) shows that units considered reflection, discussion and improvement of awareness of experiences as crucial to learn and become better at their tasks. Finally, Haaland (2016, p. 1010) describes that the Norwegian Provincial Reconstruction Team improved significantly in the period 2007 until 2009 regarding the execution of operations at the tactical and technical levels, due to experiences in the beginning of that period. It cannot be distilled from previous research if units were distinguishing between lessons that were solvable on their own level and lessons that needed to be sent to the higher level for further analysis and implementation.

Since learning took place within the units and in between them, processes supporting the analysis and storage of experiences must have been present. No proof has been found on such processes taking place in a formal, purposely way. Therefore, it will be labelled as medium.

The dissemination of learned lessons from units in Afghanistan to the rest of the organisation is quite ambiguous. On the one hand a formal procedure containing various types of reports did exist. After the end of the preparation period, and after 40 and 180 days after the start of the deployment, units had to send a report to the Norwegian Headquarters (Hennum et al., 2008, p. 23). Moreover, the Land Warfare Centre conducted interviews with personnel during their redeployment from missions in order to collect lessons (Norwegian Defence Staff, 2015a, p. 20). Those reports were strictly timed, which meant that experiences sent in using those reports were often already quite old by the time they had to be sent in. Their usability had degraded as a result of that (Nesheim, 2016, p. 48), something concluded by Svinndal as well (2015, p. 39). Furthermore, for those who wrote the reports it was often unclear what would happen with those lessons (Svinndal, 2015, p. 40). On the other hand, learned lessons were disseminated in an informal manner (Erstad & Folkestad, 2016, p. 37; Haaland, 2016, p. 1018; Heintz, 2009, p. 49). The small size of the Army did allow for easy informal exchange of lessons (Nesheim, 2016, p. 38). However, Isaksen et al. (2014, p. 45) point at the risk that as personal experiences were shared in an informal way with the next contingent, those experiences often were not thoroughly analysed by the organisation. This, too, degraded their usability, something Erstad and Folkestad confirmed as well (2016, p. 37). Finally, not all lessons were shareable due to a too high security classification (Svinndal, 2015, p. 46).

Although relevant criticism is to be found in previous research on how formal dissemination of learned lessons took place, formal processes were definitely in place and executed as planned. It will therefore be labelled as high.

	Phase within the process of learning			
	Collection	Analysis	Storage	Dissemination
BN Level	H	M	M	H

The Land Warfare Centre

The predecessor of the Land Warfare Centre, the TRADOK, was not tasked to conduct lessons learned processes within the Army before 2007. After that, the TRADOK was reorganised into the Land Warfare Centre. This reorganisation influenced the work related to lessons learned processes negatively (Heintz, 2009, p. 59). In 2014 and 2015, the people working in the Section for Lessons Learned (SLL) were re-tasked, due to other priorities (Nesheim, 2016, p. 26). That period falls outside the scope of this chapter, but it does show that the tasks of the SLL were not always valued as the highest priority within the Land Warfare Centre.

The Land Warfare Centre used various means to collect experiences from operations abroad. It collected the reports sent to the Norwegian Joint Headquarters, it conducted interviews with people redeploying from operations (Norwegian Defence Staff, 2015a, p. 20) and it evaluated specific events. The evaluation of the operation Harekate Yolo II in 2007 is a good example of that (Haaland, 2016, p. 1006). It collected experiences both actively and passively (Norwegian Army Command, 2012, pp. I-3), and it collected lessons learned from operations outside Norway, such as the war in Georgia and a battle of French forces in Afghanistan in 2008 (Hærens transformasjons- og doktrinekommando, 2008, p. 4). Furthermore, it organised specific seminars on executed operations, an example of which is the seminar on Operation Tufan, 13 March 2011 (Haaland, 2016, p. 1008). Finally, it collected thematic lessons, such as on countering improvised explosive devices and on local treatment of shot wounds (Isaksen et al., 2014, p. 78).

Collection of experience within the Land Warfare Centre consisted of numerous processes that were there on purpose and described in a formal way. This phase of the learning process is therefore labelled as high.

The fact that within the Land Warfare Centre expertise within all relevant functional areas was present²⁰ made it the ideal institution for the analysis of experiences during operations. Kristiansen (2009, p. 42) criticises that model, arguing that central analysis demands a lot of resources while decentral analysis is also crucial. In certain periods the Land Warfare Centre could not make up for that strong demand for resources, neither in the right quantity nor in the right quality to be able to analyse experiences. This was confirmed by one of the former heads of the SLL, Mathisen, and by one of Afghanistan's unit commanders, Gjerde, in 2015 (Nesheim, 2016, p. 49). Furthermore, in order to be able to conduct a thorough analysis on experiences, it is also important to be able to compare previous experiences. Conducting the analysis centrally within the Land Warfare Centre would enable a comparison between several different units and over a longer period of time. A well-working system, or database, would be required to be able to do so. In the period this thesis covers, the Armed Forces used FERDABALL as supportive tool for lessons learned. However, that system was hardly ever used in the preparation to missions (Heintz, 2009, p. 50), and it was even called "Big Black Hole" by those involved (Bonnievie-Svendsen in Svinndal, 2015, p. 39). The poor usability of FERDABALL has limited the possibilities to compare previously identified lessons with new ones significantly.

Although the role of the Land Warfare Centre with regard to analysis of experiences was described in a formal way, in practice such processes were absent frequently, both due to a lack of capacity and usable supporting tools. Since it did occur occasionally and in a formal way, this phase is labelled as high.

The Land Warfare Centre was the right institution when it comes to the storage of many of the DOTMLPF-I elements. It was overall responsible for exercises and training within the Army, including providing support to units in preparation of their missions. It managed the production of normative documentation and it supported the future development of the Army as a whole. The processing and follow-up of the implementation of external measures was

²⁰ The Land Warfare Centre incorporates schools on different specialties within the Army, like signals, manoeuvre, firepower, winter warfare etc. The heads of those schools are the Army's chief advisors on their respective functional specialties.

complicated (Norwegian Defence Staff, 2015a, p. 20). Within the Land Warfare Centre, the Section for Lessons Learned was placed relatively low in the hierarchy. Implementing change from that section was therefore not always possible due to a lack of authority (Hærens transformasjons- og doktrinekommando, 2008, p. 5).

With regard to storage of identified lessons the Land Warfare Centre had formal processes in place that were followed in case of sufficient authority. This phase is therefore labelled as high too.

One could argue that, looking at the tasks of the institution, the phase of dissemination was relatively meagre for the Land Warfare Centre: as long as it implemented the relevant lessons into training and exercises and into changes of normative documentation and as long as it incorporated those lessons in the development of the army of the future, no further dissemination was possible inside the own organisation of the Army. In that case, any dissemination would have been focused on for example spreading lessons to the Norwegian Joint Headquarters, to foreign armies and other, external institutions. Previous research did not give clear answers on how the Land Warfare Centre conducted dissemination of learned lessons. However, following the reasoning above, it is less relevant for this thesis. This phase in the learning process is therefore labelled as non-applicable.

Phase within the process of learning				
	Collection	Analysis	Storage	Dissemination
LWC	H	H	H	N/A

4.5 Sub conclusions

A number of interesting conclusions can be drawn. In the first place, relatively much research has been done on the learning capacity of deployed units and of the Armed Forces as a whole during the operations in Afghanistan. The research hardly ever showed evidence of the Army Command or Brigade North having a role in those learning processes. Although the chain of command during operations shows that those two levels are not part of the command structure, that does not mean that they had no role in the lessons learned processes. One would especially expect a larger role for the Army Command, being the highest level within the Army with important tasks related to for example the acquisition of new material and the development of the Army into the future.

A second conclusion is that despite the strong focus on learning processes, both within the Army and the Armed Forces as a whole, no significant formal changes or improvements to the Army's organisation-wide lessons learned procedures were made in the researched period. Hardly any additional formal guidelines were given within the Army in the period 2007-2012. In practice, there was no organisation-wide lessons learned process detailed enough to direct or guide the Army's units to develop their own processes. However, case-by-case guidance was given by the National Joint Headquarters, directing units to report after 40 and 180 after the start of their deployment. Although that system of reporting did receive criticism, it did form a to the situation adjusted procedure on learning from experience that was conducted as it was meant.

The third conclusion is that within the Land Warfare Centre, the learning processes are labelled high in all phases. An explanation is the fact that within the Land Warfare Centre, a special section dealing with lessons learned processes is present. Having dedicated personnel does seem to stimulate lessons learned processes to be executed, although those persons were not always used for those processes, but also for other tasks. It must be stressed, however, that the Land Warfare Centre was only to a limited extent able to compare previous lessons with new ones. The lack of a usable supporting system to conduct that comparison seems to have caused this problem.

The analysis in this chapter has led to the following labelling of the phases in the learning process:

Level ²¹	Phase within the process of learning			
	Collection	Analysis	Storage	Dissemination
NAC	L	L	L	L
LWC	H	H	H	N/A
BDE N	L	L	L	L
BN level	H	M	M	H

It must be stressed that the labelling of the processes only applies to learning related to the operations in Afghanistan. The fact that the labelling of those processes within both the Army Command and Brigade North is labelled low means that in this setting there were no or hardly any processes in use with respect to learning from the missions in Afghanistan.

²¹ See Annex B: Abbreviations

5. Trident Juncture 2018

In this chapter, the lessons learned processes as they did or did not take place within the Norwegian Army force structure during and after Trident Juncture are analysed.

First, the sources used for this chapter are briefly described. Second, the chain of command during the exercise is shown, followed by a description of the case-by-case guidance that was issued with respect to learning from Trident Juncture. Fourth, before ending the chapter with sub conclusions, the actual processes as they took place during and after the exercise are discussed.

The analysis in this chapter uses various types of information. The bulk of the information is retrieved from interviews. Initially, using the author's own position within the Norwegian Army Command, the Trident Juncture lessons learned point of contact within the Army Command was identified: Lieutenant Colonel Netland, working within the Army Command's National Land Operation Centre. She stated who the point of contact at Brigade North was. At battalion level it is often the operations officer who is responsible for lessons learned processes within the battalion, and at company level it is usually the company commander. Finally, at the Norwegian Joint Headquarters, the top level within the operational chain of command, there is a section in place that is specifically responsible for lessons learned processes. All those persons were interviewed and their roles with regard to lessons learned processes were confirmed in the interview invitation as well as in the initial phase of the interview.

A second source of information were documents that the interviewees introduced during the interviews. Those documents were retrieved and analysed to complement the interview transcriptions. Finally, the author conducted his own research, predominantly on the Armed Forces' intranet system (*FIS B Begrenset*), that led to relevant additional documents.

5.1 Trident Juncture’s chain of command

During the preparation and execution of an exercise two chains of command can often be identified: the organic one, consisting of the peacetime establishment of the military units and the exercise scenario chain of command, consisting of the units that “fight” on one of the sides within the exercise scenario.

Lessons resulting from an exercise need to be addressed in both chains of command. They can have different scopes, objectives and contents, depending on the chain of command the identified lessons needs to address.

In figure 5-1 we see a simplified scheme of the organic chain of command of the Norwegian Army on the left side. On the right side, Trident Juncture’s chain of command is shown, also in a simplified version. The Norwegian units that participated are depicted in orange, whereas the yellow units were formed by other nations.

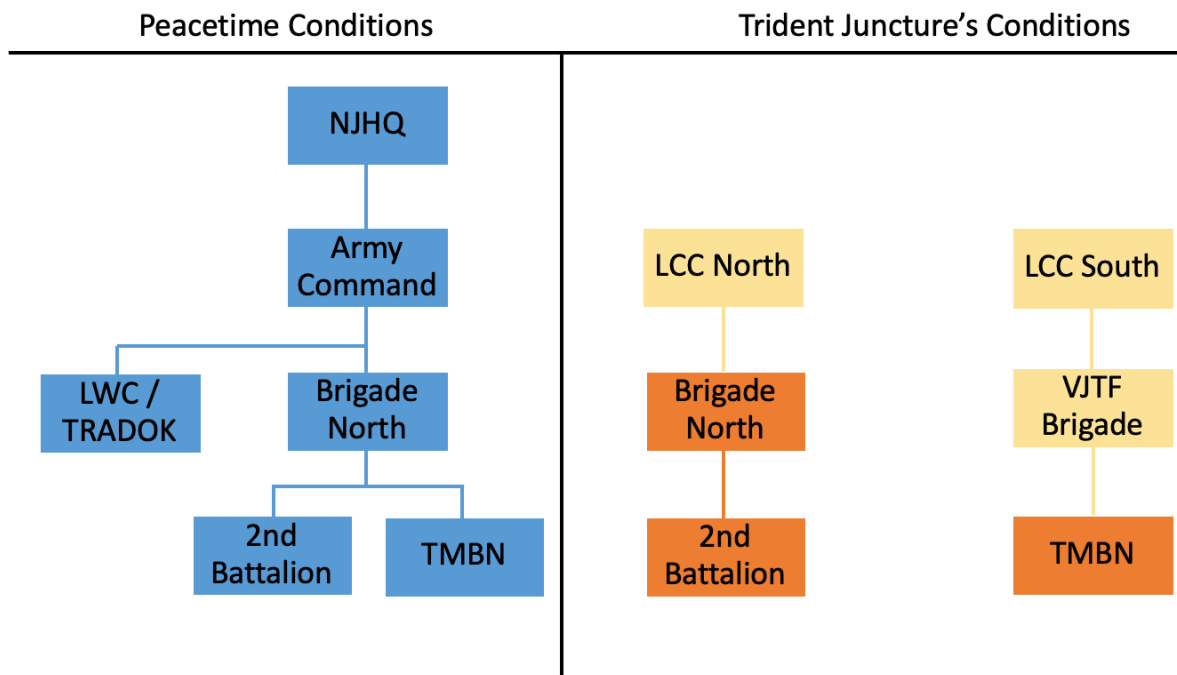


Figure 5-1 Chain of Command, simplified (Norwegian Army Command, 2017 Vedlegg A, 2018b)

The Army Command is not included in the Trident Juncture scenario. It remained conducting its peacetime operations as usual. Brigade North as a whole was placed under command of Land Component Command North (LCC-N) which was formed by NATO’s Land Command from Izmir, Turkey. The Telemark Battalion (TMBN) was placed under command of the Very

High Readiness Joint Task Force Brigade (VJTF Brigade) led by a German brigade headquarters with augmentees from the participating NATO countries.

The implications of those multiple chains of command for the lessons learned processes are especially relevant in the analysis phase: there, for every experience that is analysed, it must be determined whether that lesson is relevant for the peacetime chain of command, the exercise scenario chain of command or both. If that distinction is not made, valuable lessons could be sent to the wrong recipient or the right recipient might not receive the valuable lessons at all. Within this research only the peacetime chain of command is examined, since the focus is solely on the lessons learned processes within the Norwegian Army.

5.2 Guidelines introduced for Trident Juncture

In chapter three, it was stated that the Army cannot just rely on its “natural” or informal processes of learning, but that it must deliberately use routines to capture the changes in the individual members’ mental models and incorporate those into its shared mental models. Furthermore, as stated in the introduction, it is to be expected that Trident Juncture 2018, being one of the largest NATO-exercises since the end of the Cold War, triggered the Army to implement a robust lessons learned procedure in order to capture, analyse and process all its relevant experiences. This paragraph analyses what case-by-case guidance was given through the organic chain of command, from the National Joint Headquarters in Bodø down to the battalion level.

At the Norwegian Joint Headquarters, a distinction was made between two parts of the exercise: the Field Training Exercise, conducted in accordance with the force structure, and the Command Post Exercise, conducted by headquarters without having troops actually conducting actions “in the field”. This research focuses on the field training exercise, since that part included the troops relevant in this thesis.

With respect to this part of Trident Juncture, the National Joint Headquarters ordered its subunits, including the Army, to (Norwegian Joint Headquarters, 2018):

- Implement an internal system to guarantee taking care of experiences from planning and execution of the exercise. The Army should actively register its experiences;
- Point out a lessons learned Officer with Primary Responsibility, who would:
 - Be point of contact to NJHQ's Section for Operational Experiences;
 - Collect observations from own and subordinate units;
 - Organise and conduct an analysis on those observations;
 - Collect and process the First Impression Reports from subordinate units;
 - Lead the work on producing the unit's own First Impression Report and send it to NJHQ within the expected deadline.
- Conduct an After Action Review at the end of the exercise. This will lay the foundations for the unit's First Impression Report.

Finally, the headquarters stressed that it was important to monitor the various lessons identified, both by themselves as by the tactical units. Each unit should develop its own Lessons Identified Action List, a list that would not only show the various lessons that have been identified, but also the responsible actor for the implementation of any measures that are recommended to be implemented.

At the level of the Army Command, the Norwegian Joint Headquarters' instructions were processed in an own order to the Norwegian Army's subunits (Norwegian Army Command, 2018a). That order appointed the officer with primary responsibility within the Army and it ordered Brigade North to:

- Register lessons and observations during the exercise;
- Conduct an After Action Review and produce and deliver a First Impression Report;
- Be prepared to participate in a lessons learned working group after the end of the exercise.

The order provided the units with mandatory formats for a First Impression Report and a Lessons Identified List.

Residing below the level of the Army Command is Brigade North. The brigade did not include any case-by-case guidelines on learning from experience in the relevant orders for the exercise (Brigade Nord, 2018a, 2018b, 2018c). The interviewed representatives from the Telemark Battalion and the Second Battalion both confirmed that their unit had not received any additional guidelines on learning from experience from Trident Juncture, nor that they

had given specific additional guidelines themselves in preparation to the exercise, neither to their own level nor to their subunits (Reinaas, B. and Skjærbæk, H.M.S., interview, 13 February 2019; Stormo, S., interview, 7 February 2019).

It can thus be concluded that within the Army's force structure, only the Army Command issued case-by-case guidelines on learning from the experiences Trident Juncture would bring. Brigade North and the battalions did not follow that example. That does not necessarily mean that learning processes did not take place at all. The following paragraph analyses what processes occurred within and between the Norwegian Army's levels in practice.

5.3 Actual lessons learned processes in use

This paragraph primarily displays and discusses the results of the interviews with representatives from the different units, supplemented by additional analysis of relevant documents as stated. Each subparagraph concludes with labelling of the processes within the different phases of the learning process, using the classifications as defined in paragraph 3.4.

Norwegian Army Command²²

Within the Army Command, the G7 (the head of the office responsible for training, education and exercise) is responsible for lessons learned processes throughout the army. Although in normal peacetime conditions the Army Command does not have any unit-level lessons learned procedures in place, the Army's G7 did write an order issuing case-by-case guidance on how learning from experience regarding Trident Juncture had to be conducted (Norwegian Army Command, 2018a). It was a formal document focussing predominantly on roles and responsibilities and on how the Army Command should collect identified lessons from its subunits. Furthermore, it provided mandatory formats on reporting the identified lessons. The formal role of the G7 as lessons learned officer with primary responsibility was then delegated to the head of the Norwegian Land Operation Centre, since the G7 himself was assigned a specific role within the exercise organisation that could not be combined with other roles.

²² This paragraph is based on an order, written by the Army Command on learning lessons from Trident Juncture (Norwegian Army Command, 2018a), and on an interview with the head of the Norwegian Land Operation Centre (Netland, K.S., 8 February 2019).

In the Norwegian Land Operation Centre, the operational part of the Army Command, internal procedures were agreed upon to collect relevant lessons from own personnel. The centre also collected lessons from other, comparable units such as the operations rooms of the Norwegian Cyber Defence Force, the National Reserve and the National Air Operations Centre in Bodø, often by visiting those units.

After collection of the lessons was finished by the end of January 2019 they were analysed. The Army’s subunits were invited to a *workshop Lessons Identified* within the Norwegian Army (*arbeidsmøte LI i Hæren*). There, the various lessons were analysed and it was defined whether or not each lesson could be implemented using own measures or not. The most important lessons were imported in the Norwegian Army’s First Impression Report that was sent to the Norwegian Joint Headquarters at a later stage.

The Operations Centre’s main procedure to disseminate its learned lessons was by sharing them during the visits to other operations rooms.

Conclusion is that apart from dissemination the Army Command had formal procedures in place in all phases of the learning process, some of them stated in an order, other decided on or refined in a later stage. Furthermore, those procedures were executed in relative short time after the exercise. Since this thesis does not aim at examining the end-result of the processes, but merely the purposely existence of them, the following subconclusion is made:

	Phase within the process of learning			
	Collection	Analysis	Storage	Dissemination
NAC	H	H	H	M

One important remark must be made: the described procedures and processes did take place as a direct consequence of Trident Juncture 2018. It is uncertain whether or not such procedures and processes are sufficiently in place during regular peacetime conditions as well. However, from relevant documents (Norwegian Army Command, 2018a; Norwegian Joint Headquarters, 2018) and various interviews (Halvorsen, T.A., interview, 31 January 2019; Netland, K.S., interview, 8 February 2019), it becomes clear that the Norwegian Joint Headquarters has had a strong influence by pushing the Army Command to appoint a lessons learned officer with primary responsibility, to deliver a First Impression Report and to be

present at various lessons learned meetings and seminars. It is likely that this has had a positive effect on the Army Command's lessons learned processes regarding Trident Juncture, although it is uncertain whether those process would have been equally high under a situation in which the Army Command had not received case-by-case guidance from its higher level.

Brigade North

Brigade North did not issue any additional guidance related to lessons learned processes for Trident Juncture, neither for its own staff personnel or for its subunits, what was confirmed by studying the relevant documents (Brigade Nord, 2018a, 2018b, 2018c) and the interviews with the brigade representative and the interviewees from the battalion level²³. According to the brigade representative the brigade does not have any unit-level lessons learned procedures, outside the scope of the exercise and it does not formally induce its own personnel or its subunits to learn from experience. One exception is the current *Virksomhetsordre 2019* or yearly business plan. There, the brigade's subunits are ordered to produce a First Impression Report and a Final Exercise Report after every brigade-led exercise.

Since none of the available documents give any detailed guidelines on lessons learned processes within Brigade North, the rest of this paragraph is based on the interview with the brigade representative.

One way in which Brigade North actively collected experiences is the conduct of a hot wash-up during one of the last days of an exercise and a Post Exercise Discussion between the brigade commander and his/her subordinate commanders, some weeks after every major exercise. There were no transcriptions or reports made during those two types of meetings. Another example of such a meeting is the recently organized Tactical Seminar (January 2019). That seminar focused on the preparation of the next major exercise by discussing various relevant themes. Those themes will likely have been chosen as a result of the exercise's hot wash-up or Post Exercise Discussion, but that could not be confirmed during the interviews or document analysis.

²³ Krogstad, R., interview, 30 January 2019; Reinaas, B. and Skjærbæk, H.M.S., interview, 13 February 2019; Stormo, S., interview, 7 February 2019

The brigade does not have formal procedures in place to learn from other, comparable units. It does cooperate with different nations and other units, though, and learning does occur as a result of that cooperation.

Since there are relatively little processes in place to actively collect lessons internally, from subunits or from comparable types of units, the phase of collection is labelled low. Some processes do occur, but whether those will lead to learning is uncertain.

If valuable lessons are collected, the brigade does have a process to analyse them. Where applicable, the relevant section within the brigade headquarters conducts that analysis. If an integral analysis is required, the chief of staff forms a special working group that addresses the lesson. If it can be implemented within the brigade’s own authority, e.g. changing its standard operating procedures, that will be done. Otherwise, the identified lesson will be forwarded within the organic chain of command. Although this process is not formally described, it does take place, leading to medium labels for both analysis and storage of lessons. Important remark is that the brigade’s standard operating procedures are kept up-to-date this way. The author experienced this himself when a Dutch brigade headquarters, comparable to Brigade North, requested to receive a copy of its standard operating procedures, because Brigade North was well-known for having up-to-date standard operating procedures.

The brigade has no formal unit-level procedures to disseminate learned lessons to other, comparable units. If that happens, it is often coincidental. This can be explained by the fact that within the Norwegian Army no comparable unit exist to share learned lessons with.

	Phase within the process of learning			
	Collection	Analysis	Storage	Dissemination
BDE N	L	M	M	L

An interesting note is that the brigade did execute the formal guidelines it received from the Army Command in preparation to the exercise. Those guidelines were (ref. paragraph 5.2):

- Register lessons and observations during the exercise;
- Conduct an After Action Review and produce and deliver a First Impression Report;
- Be prepared to participate in a lessons learned working group after the end of the exercise.

The battalion level²⁴

Two of the in total eight Norwegian battalions within Brigade North that participated in the exercise have been examined: the Second Battalion and the Telemark Battalion. Both confirmed that they had not been asked or ordered by Brigade North to conduct a lessons learned process during or after Trident Juncture. They also did not have to send in a Lessons Identified List or a Final Exercise Report to the brigade. The Telemark Battalion did send in an evaluation report after the exercise, but that (appears to be) the result of their own initiative.

When it comes to the collection of lessons, both battalions have their own procedures with many similarities. At one of the last days of every exercise, the battalions conduct a hot wash-up with their own staff and its subunits. After some days, an evaluation meeting or Post Exercise Discussion, is organised to discuss experiences. Both units also organise seminars to discuss and analyse identified lessons within various themes on a frequent basis. Furthermore, they conduct exchange of personnel with other, comparable units in order to learn from their experiences and to import learned lessons into the own units. Because of the fact that both battalions use formal procedures for the collection of experiences, that phase in the learning process is labelled high.

Systematic analysis of experiences and processing them into identified lessons is done differently between the units. Second Battalion conducts a quick analysis upon registering it within the unit's internal lessons learned database (based on Microsoft OneNote). If direct remedial measures are required and feasible, those will be taken care of immediately. Otherwise, the lesson will be archived in the unit's database for later reference. The Telemark Battalion conducts its analysis in a different way. There, together with support from the Army's Land Warfare Centre, the analysis is made whether the unit has met its training objectives during the exercise or not. If not, that training objective will be registered to be trained again, during a future exercise. If a lesson needs other remedial measures, it is sent to the appropriate level within the Norwegian Army.

Although analysis takes place within both battalions, it is not (specifically) focused on distinguishing between lessons that can be solved at the own level or not, nor on what factor

²⁴ This paragraph is based on interviews with representatives of both Second Battalion (Stormo, S., 7 February 2019) and the Telemark Battalion (Reinaas, B. and Skjærbæk, H.M.S., 13 February 2019).

within the DOTMLPF-I framework a remedial action would be aimed. This means that the analysis is not “complete”: it does not answer the question on what would need to be changed to learn the specific lesson, and whether or not the own unit would be authorised to implement that change. Especially Second Battalion clearly states that is not or to a very limited extent possible to change its standard operating procedures as a result of identified lessons, since it does not have any. Analysis and storage are therefore labelled as medium.

Dissemination of lessons learned from the battalions to other units has different priorities. With regard to this, the Telemark Battalion has a special responsibility. It is the only battalion without conscripts, consisting solely out of professional soldiers. Every year, the battalion commander issues an order where he/she expresses what the unit should do to spread lessons learned to other parts of the Norwegian Army. Second Battalion does not have a comparable focus and does not have specific guidelines on how to disseminate learned lessons.

Dissemination at the battalion level is therefore labelled as medium.

	Phase within the process of learning			
	Collection	Analysis	Storage	Dissemination
BN Level	H	M	M	M

The Land Warfare Centre²⁵

The Land Warfare Centre forms a separate entity within the Army’s chain of command. It is overall responsible for (supporting) exercises and training within the Army, for the production of normative documentation and for (supporting) the future development of the Army as a whole. It is not an operational (combat) unit. However, if it is to support the future development of the Army, the lessons learned processes within the Army are very relevant for the Land Warfare Centre.

²⁵ This paragraph is based on the interview with the head of Land Warfare Centre’s Section for Lessons Learned (Vie, J., interview, 13 February 2019).

In order to support those lessons learned processes, the centre has an own *Seksjon for erfaringsl ring* or Section Lessons Learned. It consists of two persons, and its roles are to:

- Support the systematic collection of lessons identified within the Norwegian Army;
- Support the various schools within the Land Warfare Centre with regard to the collection and analysis of lessons;
- Improve and/or develop a formal organisation-level lessons learned procedure within the Army.

During Trident Juncture, the Section Lessons Learned was specifically assigned to conduct a lessons learned process on some aspects of the exercise that the Army (and the Norwegian Armed Forces) had not conducted earlier: developing and maintaining an organisation for Land Operations Control and executing Host Nation Support to all foreign land forces within the exercise. The specifics of those two tasks are less relevant within the scope of this thesis, but it is relevant that those tasks are no part of the Land Warfare Centre's organic tasks. They were so exhaustive that in order to execute them, the centre was deployed to the exercise completely, and most staff personnel had to work in a different role than usual²⁶. The second role of the Section for Lessons Learned was therefore exactly what it did during the exercise: supporting the whole of the centre with its lessons learned process.

During and after Trident Juncture, in practice the Section for Lessons Learned consisted of merely one man: its section head. In that period, the section conducted a formal, pre-planned and organised lessons learned process. Collection did not only consist of requesting Lessons Identified Lists from participants, but also of giving briefings on how the process would look like, urging people to deliver high quality observations and conducting interviews with relevant players. The analysis did take single- and double loop learning into account, distinguishing between lessons that could be learned at the own level and lessons that needed a higher level to take action on. Storage meant direct implementation of measures during the exercise as well as storing lessons within the Land Warfare Centre's internal system for use in preparation to future exercises. Dissemination also took place, especially to the Norwegian Joint Headquarters, but also internally within the Army. An example is a Trident Juncture Lessons Learned Seminar the centre organised on the 21st and 22nd of January 2019, where

²⁶ The author has this information from first hand, also being deployed as part of the Land Warfare Centre during Trident Juncture 2018.

interesting tactical lessons were shared and discussed with personnel from various parts of the Army²⁷. This leads to the following classification of the phases of the learning process:

	Phase within the process of learning			
	Collection	Analysis	Storage	Dissemination
LWC	H	H	H	H

During the interview with the head of the Section for Lessons Learned, it also became clear that this section uses significant resources to support the lessons learned processes for units before, during and after international deployments. The section studies three reports that each unit writes in relation to the deployment: one during the preparation phase (*utdanningsreport*), one report 40 days and one 180 days after the start of the deployment (D+40 and D+180 reports). The latter two are also used to prepare a *Tactical Debrief*, a conversation with personnel during their redeployment from a mission. The whole process focuses on identifying lessons related to the mission’s objectives, using the DOTMLPF-I framework. Those lessons are analysed on the spot, supported by selected subject matter experts. Identified lessons are implemented directly in the preparation of the next contingent, by sending a recommendation on changing the mission’s DOTMLPF-I factors to the Army Command. This procedure seems well-implemented and thoroughly executed.

Other relevant remarks

During most interviews, people initially did not recognise processes as related to learning from experience. The hot wash-up and Post Exercise Discussion were often mentioned as part of the lessons learned process, but the interviewer had to explain that visiting other units to discuss their experiences or organising internal thematic seminars can also be seen as part of the collection of experiences. At the time of the interview this explanation by the interviewer seemed not relevant and has unfortunately been removed from the transcripts. However, it does show that there seems to exist a lack of knowledge about lessons learned processes within the different parts of the Army.

²⁷ The author took part in that seminar.

One aspect of analysis that, according to the head of the Land Warfare Centre’s Section for Lessons Learned, is not conducted in a sufficiently structured way, is comparing new lessons identified with previous ones:

...we do not have a “database-system” available that enables us to easily compare recent lessons identified with previous ones. It is not possible to effectively search for that in the current SharePoint environment that has integrated the FERDABALL database. However, this is an essential capability if you want to learn. A recent experience that does not look important can become important by just being recurrent.

Vie, J., interview, 13 February 2019

5.4 Sub conclusions

The previous paragraph results in the following table:

Level	Phase within the process of learning			
	Collection	Analysis	Storage	Dissemination
NAC	H	H	H	M
LWC	H	H	H	H
BDE N	L	M	M	L
BN level	H	M	M	M

During and after Trident Juncture, both within the Army Command and the Land Warfare Centre, lessons learned processes were in place in all phases of the learning cycle and almost always on purpose. At the brigade level and below, in most phases of the learning cycle, processes were in place, but hardly ever in a formal manner, except for the collection of experiences at the battalion level. The differences in the processes between the Army Command and the Land Warfare Centre on the one side and the brigade and battalion level on the other side can have various causes.

The first conclusion can be drawn from two observations. In the first place, within the Army Command a person was specifically assigned to act as an officer with primary responsibility with regards to lessons learned processes for this exercise. The personal commitment to the exercise’s lessons learned process seems to have had a strong influence on the Army Command’s priority it received. The other observation is that both in the Land Warfare Centre and at the level above the Army Command, the Norwegian Joint Headquarters, personnel is

working in a job dedicated to lessons learned processes. At the Land Warfare Centre, this has had a visible positive effect resulting in a label high within all phases of the process. It is very likely that the efforts conducted by the Joint Headquarters, both in written orders as in organising different meetings, will have worked as an additional incentive to the Army Command's efforts. The conclusion is thus that having personnel dedicated to the lessons learned process, in a permanent position as well as being appointed on a case-by-case basis, strongly improves the lessons learned processes within that unit.

The lack of formal processes at Brigade North and the battalion level does not have a clear cause. However, during the interviews the interviewer often had to give additional explanation on lessons learned processes. A lack of detailed knowledge on lessons learned processes could therefore be one of the reasons because of which the phases of analysis and storage at the levels of Brigade North and the battalion are not conducted in a more formal way.

Finally, it can be concluded that both within the Land Warfare Centre and Brigade North, the guidelines on the conduct of the lessons learned process as given by the Army Command have been executed accordingly. Brigade North did not issue detailed case-by-case guidance to its own subunits. Formulating formal guidelines to subordinate units does seem to have motivated them to execute tasks with regard to lessons learned processes.

6. Comparing the cases

After the analysis of the lessons learned processes during the operations in Afghanistan (2005 until 2012) in chapter four and of those processes related to Trident Juncture in chapter five, this chapter aims at comparing the two cases.

The three forms of lessons learned procedures are relevant here: organisation-wide procedures, unit-level procedures and case-by-case guidance²⁸. Those three forms are all formal in nature: they are described in orders, standing operating procedures and/or other steering documents. Lessons learned processes can also occur in an informal manner. In that case, they occur without being described in one of those documents in advance.

In the first paragraph, the organisation-wide lessons learned processes within the Army as they were in place in the two cases are compared. Then, a comparison is made of the actual conduct of lessons learned processes within each of the Army's levels. The third paragraph discusses the differences and similarities, followed by an in-depth review of selected findings in the last paragraph.

6.1 Comparison of the Army's lessons learned processes

This paragraph discusses whether or not the Army's units were encouraged to formalise lessons learned procedures at the own level in general, outside the scope of Afghanistan or Trident Juncture, based on detailed guidance from its higher levels.

In the period from 2005 until 2007, a number of relevant changes were made, including the erection of a Section for Lessons Learned within the predecessor of the Land Warfare Centre, the TRADOK. However, the Army's units were not tasked to conduct their own lessons learned processes, nor was it described how the units should disseminate their experiences to the TRADOK. Some guidelines were given, but a well-defined process did not come into effect. An internal revision of learning from experience within the Armed Forces showed that the guidelines were perceived to be not specific and/or practical enough to be used throughout the chain of command (Norwegian Defence Staff, 2015a, p. 27). The same guidelines were confirmed, but not expanded or defined in a more detailed manner in the Education and Training Directive, issued by the Army in 2012 (Norwegian Army Command, 2012). In 2018,

²⁸ See paragraph 1.3

when Trident Juncture took place, that directive had not been updated, supplemented or replaced.

It can be thus concluded that both during the Afghanistan operations from 2005 until 2012 and during the exercise Trident Juncture in 2018, the organisation-wide lessons learned procedures within the Army were very limited and not detailed enough for units to base their own lessons learned procedures on.

6.2 The differences in practice

This paragraph discusses the differences between the cases at each of the Army’s levels within its hierarchy. Below, the tables in the sub conclusions of chapters four and five are merged into one:

Level		Phase within the process of learning			
		Collection	Analysis	Storage	Dissemination
NAC	Afghanistan	L	L	L	L
	Trident Juncture	H	H	H	M
LWC	Afghanistan	H	H	H	N/A
	Trident Juncture	H	H	H	H
BDE N	Afghanistan	L	L	L	L
	Trident Juncture	L	M	M	L
BN level	Afghanistan	H	M	M	H
	Trident Juncture	H	M	M	M

Table 6-1: Comparing lessons learned processes

In this table, the classification as described in paragraph 3.4 is used:

- Low (L): there is no lessons learned process in place within the respective phase.
- Medium (M): there is a unit-level lessons learned process in place, but it has not been formalised within the unit’s standard operating procedures or other steering documents.
- High (H): there is a formal, unit-level lessons learned process in place.

In order to actively learn from experiences, the Army would need Organisational Learning Mechanisms²⁹. Those mechanisms should collect, analyse, store and disseminate lessons in a systematic way. In table 6-1, that would mean that all levels within all phases of the learning process would be labelled High.

Norwegian Army Command

Within the Norwegian Army Command, huge differences were found between the Afghanistan period and Trident Juncture. As table 6-1 shows, very limited proof was found of the Army Command's involvement in formal or informal lessons learned processes related to the ongoing operations during the Afghanistan period.

With respect to Trident Juncture, the Army Command did provide its subunits with detailed guidelines specifically related to the exercise. Moreover, it took part in those processes. Within all four phases of the learning process, the Army Command had formal procedures in place and it stimulated Brigade North to do so too. Furthermore, a lessons learned officer with primary responsibility was appointed. Here, the Norwegian Joint Headquarters had a strong influence, using the peacetime chain of command³⁰ to order the Army Command to appoint a lessons learned officer with primary responsibility, to deliver a First Impression Report and to be present at various lessons learned meetings and seminars.

Brigade North

Within Brigade North, some differences were found between the cases. In the Afghanistan period, very limited proof was found on its involvement in lessons learned processes related to the ongoing operations. During Trident Juncture, Brigade North was involved in those processes, especially in the phases of analysis and storage, although predominantly in an informal manner. It did not or very limitedly stimulate its own subunits to conduct lessons learned processes, something Brigade North had received itself from its higher level. It appears that this stimulation from a higher level did not have the same effect on Brigade North as it had on the Army Command. An explanation for this has not been found.

²⁹ See paragraph 3.1

³⁰ See paragraph 5.1

The battalion level

Table 6-1 shows that there were few differences between the Afghanistan period and Trident Juncture at the battalion level. In both cases, lessons learned processes were in place in a formal manner in the phase of collection and in an informal manner in the phases of analysis and storage.

One difference between the cases was found in external stimulation. During the operations in Afghanistan, units were obliged to deliver reports to the Norwegian Joint Headquarters, after 40 and 180 days after the first day of the deployment, which they did accordingly. Those reports had to include identified and/or learned lessons. Regarding Trident Juncture, the units did not receive any guidance on learning from experience from Brigade North.

The Land Warfare Centre

The Land Warfare Centre's Section for Lessons Learned functioned as the Army's central hub for lessons learned processes in both cases. It consisted of two persons (or: positions) dedicated to learning from experience. It was therefore to be expected that the centre's lessons learned processes are categorised high in all phases of the learning process, both during the Afghanistan period and during Trident Juncture. Table 6-1 shows that this is correct for almost all phases, except possibly for dissemination of experiences during the operations in Afghanistan. Due to a lack of information during this research it was not possible to label that phase.

The Land Warfare Centre conducted its task during the Afghanistan period in a more general way collecting, analysing and implementing lessons from the operations area. Regarding Trident Juncture, it was tasked to conduct a lessons learned process on pre-defined aspects of the exercise, something it conducted accordingly. Here, a specific order from the higher level was executed as is was meant: it focused the subunit on conducting a lessons learned process in a specified way, with defined objectives to be accomplished and procedures to be followed.

One significant similarity in the cases is that the Land Warfare Centre did not have a system available to compare previously identified lessons with new ones. If an identified lesson for some reason was not implemented, it could not be saved in a systematic manner for future reference. Some lessons only become relevant for implementation if repetition occurs. In both

cases, there was no usable system to conduct such a comparison at the Land Warfare Centre's disposal.

6.3 Explaining differences and similarities

In the comparison, the most significant difference emerged within the Norwegian Army Command: it hardly had any learning processes in place related to the operations in Afghanistan, while it had (predominantly) formal processes in place with respect to learning in Trident Juncture. A comparable, but less significant difference can be found within Brigade North: no proof of formal or informal lessons learned processes was found regarding the operations in Afghanistan, whereas there were (predominantly informal) processes in place as a result of the exercise Trident Juncture, especially within the phases of analysis and storage.

The chain of command can explain this difference. During the operations in Afghanistan, neither the Norwegian Army Command nor Brigade North was part of the mission chain of command, explaining a lack of commitment to the lessons learned processes related to the operations in Afghanistan. However, during Trident Juncture the Army Command was no formal part of the exercise chain of command either, and Brigade North resided under a foreign unit (Land Component Command North). The Norwegian Joint Headquarters used the peacetime chain of command to give case-by-case guidance to the Army on how to conduct lessons learned processes related to the exercise. Something the Army Command on its turn ordered Brigade North and the Land Warfare Centre to do, too. For an unknown reason, Brigade North did not order its own subunits to conduct lessons learned processes during and after Trident Juncture. It shows however that choosing a specific chain of command to issue guidance on lessons learned processes will have a strong influence on the units that are involved in those processes.

Four similarities were found in the comparison of the cases, which will be discussed below.

The first similarity is that in both cases, case-by-case guidance on learning from experience was issued. During the operations in Afghanistan, the battalion level was ordered to deliver reports after 40 and 180 days, something that was conducted accordingly. Each deployment to that mission would receive an own, tailor-made order from the Norwegian Joint Headquarters. The Norwegian Army Command received detailed guidance on lessons learned processes during Trident Juncture, leading to the Army Command writing own detailed guidance for its

own subunits. In that guidance the Land Warfare Centre was ordered to conduct a lessons learned process with specific aims, which it did accordingly. A possible explanation is that in both cases, existing organisation-wide lessons learned procedures were not sufficiently detailed for units to use. Thus, if learning from experience had to occur in an active manner, additional guidelines were required. Furthermore, both the operations in Afghanistan and the exercise Trident Juncture were seen as important enough to prioritise resources on issuing and executing case-by-case guidance to the various levels within the Army to conduct tailor-made lessons learned processes. Although for an unknown reason Brigade North did not follow that example and did not issue case-by-case guidance itself to its subunits, those specific case-by-case guidelines appear to have been quite effective.

The second similarity that was found is that in those units where the processes were labelled high in most or all phases, dedicated personnel related to lessons learned processes was part of the organisation. The most obvious example is the Land Warfare Centre, where in both cases the processes in almost all phases were in place in a formal manner. Another example is the Norwegian Army Command, in which during Trident Juncture an officer with primary responsibility was appointed. There, the processes were in place in a formal manner as well. Finally, although the Norwegian Joint Headquarters was not part of the analysis of this research, there is a separate section consisting of five positions dedicated to learning from experience, something that appeared to be very effective. The (rather obvious) explanation for this is that personnel that is dedicated to learning from experience within a unit is strongly motivated to expand their knowledge on lessons learned processes and to use a significant amount of effort in optimising them.

A third similarity that was found is that comparing new lessons identified with previous ones was not conducted in a sufficiently structured way. The explanation is that in both cases no suitable system was available to support such analysis. In the Afghanistan period, FERDABALL was to be used while it was not fitted for that purpose. During Trident Juncture, there was no supporting database-system available at all.

The final similarity was found at the battalion level in the phases of collection, analysis and storage. In both cases analysis and storage were labelled medium, while the phase of collection was labelled high. A clear explanation of this similarity was not found during this research. In the next paragraph, the importance of formalising procedures at the brigade and battalion levels, especially in the phase of analysis, is discussed more exhaustively.

6.4 In-depth discussion

Two of the similarities found in the previous paragraph are discussed more thoroughly here. Although they were found in both cases, they are especially interesting during the conduct of operations.

Comparing previous lessons identified with new lessons

In both cases, it was found that there were no systems available to support the comparison of older and newer lessons identified. That type of comparison is especially important during the execution of operations. During an exercise, the role of the opponent is “played” by another unit from within the own army, or from an allied army. In general, NATO armies are quite similar when it comes to for example materiel and doctrine. This implies that the simulated enemy will behave quite similar to the own units during exercises. During operations abroad, the opponent often differs a lot from the Norwegian Army. Its conduct of operations can be very different and can vary over time. As discussed in the first chapter, the opponent will learn from experience just as the own unit does and it will adjust its conduct accordingly. Thus, the amount of identified lessons during operations is expected to be much greater than during exercises. This means that in order to process all those lessons, in a period as short as possible, one should be able to store lessons identified that are not implemented in a (database-) system. If that lesson frequently reoccurs in a comparable manner, it can be recognised during the phase of analysis. That reoccurrence can lead to the implementation of a lesson that initially was not valued high enough. Without a proper system to support that analysis, comparison is not or only limitedly possible.

This thesis does not aim at answering the question as to why a suitable system for comparison was not available during both cases. It only shows that it was valued as desirable to have such a system available during both cases. Based on the theory in chapter three, developing such a (database-) system can be beneficial to support the analysis phase of lessons learned processes. The author is however sceptical on the practical feasibility of developing such a system: lessons identified are so complex, with so many external parameters and so many differences in between units, all with their own equipment, operating procedures, personnel etc., that finding previously identified lessons that are relevant to compare with new lessons, is extremely complex. For further research on the feasibility of such a system, an analysis of

NATO's Lessons Learned Portal Library and the system used by the NATO Joint Analysis and Lessons Learned Centre³¹ could be a good starting point.

Informal processes at brigade and battalion level

In both cases, the battalion level's processes related to analysis and storage of lessons were classified as medium. Processes did take place, but in an informal manner, not being described in standard operating procedures or other steering documents. That same applied to Brigade North during Trident Juncture. Especially at the lower levels within the hierarchy, the analysis of experiences is of significant importance. In the first place, if analysis at the lower levels is not conducted in a systematic manner, the risk that those lessons cannot be transferred throughout the rest of the hierarchy grows. In the second place, the reliability of experiences during operations is often questionable. During, and especially after an exercise, it is possible to converse with the party that within the scenario acted as the opposing party. Such discussions can lead to a deep understanding of the actual course of the exercise and of the cause and effect relationships of its results, thus improving the quality of the observations and their analysis. Usually, that sort of discussions are not possible during or after operations abroad. Haaland describes the problematic usability of experience as a source for learning during military operations: *...uncertainty about what factor causes which effects, makes it hard to interpret experiences* (2016, p. 1003). This so-called causal ambiguity of experience occurs expectedly much more frequently during operations than during exercises. It is therefore of special importance that analysis of experiences during operations is conducted in a thorough manner. Implementing formal procedures related to analysis and implementation of experiences at brigade and battalion level can increase the quality of those processes.

Although the phases of analysis and storage were not formally described at battalion level during the operations in Afghanistan, learning did take place. A possible explanation for this can be found in the threat dimension during operations. Operations abroad are almost without exception conducted under difficult circumstances and with a certain amount of threat. The opponent is real and is striving for its own success. During exercises, the threat is simulated and would only in very rare cases be real. Thus, lessons identified during operations would in theory receive more priority because not being able to learn lessons in those threatening circumstances could lead to more serious consequences than during exercises. The sense of

³¹ See <http://www.jallc.nato.int>

urgency increases within the whole of the Armed Force, because of which it is often easier to implement changes during operations than it would be during and after exercises. A good example is given by Erstad and Folkestad (2016, p. 48) who state that the acquisition of new or other materiel as a result of experiences during operations is done much quicker than during peacetime conditions. This increase in priority during operations could lead and has led to learning occurring despite a lack of formal processes with regard to analysis and storage at battalion level.

7. Conclusions

The central question of this thesis is:

What are the similarities and differences between the way the Norwegian Army and its subunits learned from experience during the operations in Afghanistan from 2005 until 2012 and the exercise Trident Juncture in 2018, and how can they be explained?

The most significant difference between the lessons learned processes during the Afghanistan period and Trident Juncture was the involvement of the Norwegian Army Command and Brigade North. Both were only limitedly involved in those processes related to the operations in Afghanistan, whereas that involvement was much greater with respect to Trident Juncture. An explanation can be found in the chain of command. In the Afghanistan period, neither of the two levels was part of the chain of command of the mission. In Trident Juncture, that was only partly the case, but there, the peacetime chain of command was used, initiated by the Norwegian Joint Headquarters at the top level, involving both the Army Command and Brigade North in the process. Whether that approach would have been preferable during the Afghanistan period, too, is not clear, but it would have led to a larger commitment of the Army Command (and possibly Brigade North, too) in the lessons learned processes of one of the most intense periods of the Norwegian Army in the recent past.

Four similarities have been found in the research. The first similarity is that case-by-case guidance regarding the lessons learned procedures was issued to the units, and that in most cases that guidance was executed accordingly. The explanation is that existing organisation-wide lessons learned procedures were not sufficiently detailed for units to use. Thus, if learning from experience had to occur in an active manner, additional guidelines were required. Furthermore, both the operations in Afghanistan and the exercise Trident Juncture were seen as important enough to prioritise resources on issuing and executing case-by-case guidance to the various levels within the Army to conduct tailor-made lessons learned processes.

The second similarity is that in those units where the processes were labelled high in most or all phases, dedicated personnel with respect to lessons learned processes was part of the organisation. That did not only apply to formal positions, but also to units that appointed an officer with primary responsibility for lessons learned processes, as it was done by the Army

Command during Trident Juncture. The explanation for this is that personnel that is dedicated to learning from experience within a unit is strongly motivated to expand their knowledge on lessons learned processes, and to use a significant amount of effort in optimising them.

The third similarity is that it was perceived as problematic to compare previously identified lessons with new ones during the analysis phase of the learning process. This can be explained by the fact that there were no suitable systems available to support such a comparison. During the Afghanistan period, FERDABALL was still operational, but according to the sources used in this thesis that system was not suitable for the purpose of comparing identified lessons. During Trident Juncture, there was no lessons learned support system available at all.

The fourth and final similarity is that at battalion level, and to some extent at brigade level, analysis and storage of experiences and identified lessons is conducted predominantly in an informal manner. Processes do occur but are not formalised in standard operating procedures or other steering documents. A clear explanation of this has not been found during the research. However, during the interviews the author did notice that knowledge on lessons learned processes in various units within the Army was not strongly developed³². Collection of experiences can be a relatively straight-forward activity but conducting analysis and subsequently implementation of identified lessons does require a deeper understanding of those processes. A lack of knowledge on lessons learned processes within the Army's units, both during the operations in Afghanistan and the exercise Trident Juncture, could therefore be an explanation of this similarity.

Although many researchers and personnel within the Norwegian Army are critical on its ability to learn from experience, in practice the subject does receive attention and priority within the Army's tactical units, the Land Warfare Centre and the Norwegian Army Command. Processes related to learning from experience do occur, although often not in a formalised manner. Formalising those processes, for example by describing them in the standard operating procedures within the Army's units, could improve the quality of the way the Norwegian Army learns from experience, both during operations and exercises.

³² See paragraph 5.3

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Annex A: Questionnaire and interviewees

Questionnaire, as used during the interviews

Theme	Question	Objective
Introduction	Can you describe your current job?	Getting to know each other, setting atmosphere.
	Can you describe the role your unit had during Trident Juncture 2018?	Understanding the unit's position and role during TRJE.
	Can you point out which lessons have been identified and / or learned during and after TRJE?	Getting a feeling on how to proceed during the rest of the interview.
Formal processes throughout the NAF / the Norwegian Army	<p>Is there a formal lessons learned process within the Norwegian Armed Forces / the Army, related to TRJE18 (or more general)?</p> <ul style="list-style-type: none"> • Where is it described formally? • What does it look like? • What is your role in that process? • Who is overall responsible for LL within the army / armed forces? • Did you have to file one or more LL reports during and/or after TRJE? • Have additional guidelines on LL been issued in relationship to TRJE? 	<ul style="list-style-type: none"> • General intro into theme • Search for relevant current documents
Own unit General	<p>Is there an (in)formal lessons learned process within your unit, related specifically to TRJE or more general?</p> <ul style="list-style-type: none"> • Has that process been described? 	<ul style="list-style-type: none"> • Search for relevant current documents
Own unit Collection	<p>Does your unit actively collect lessons / experiences?</p> <ul style="list-style-type: none"> • (How) does your unit collect experiences from personnel within the unit? AAR's? PXD's? • (How) does your unit induce the lower units to learn from experience? SOP's? • How) does your unit collect experience from own, lower units? Cross-level meetings? Forms or reports? 	<ul style="list-style-type: none"> • Variables related to collection
Own unit Analysis	<p>Does your unit actively conduct analysis on collected lessons?</p> <ul style="list-style-type: none"> • Are there reports available to use? • Are there roles defined for people to analyse lessons? 	<ul style="list-style-type: none"> • Variables related to analysis
Own unit Storage	<p>Does your unit change elements of DOTMLPF-I as a result of lessons?</p>	<ul style="list-style-type: none"> • Variables related to storage

Own unit, Dissemination	How does your unit spread lessons it has learned to other parts of the organization?	
Other	If you are not satisfied with the LL process currently in use, what changes would you suggest?	

List of interviewees

Date	Unit	Rank and name	Job description
30 January 2019	Brigade North	Major Reidar Krogstad	Exercise Planner
31 January 2019	Norwegian Joint Headquarters	Kommandørkaptein Tor Arne Halvorsen	Chief of the Section for Operational Experiences
07 February 2019	2 nd Battalion	Kaptein Mathias Becker	Commander Combat Support Company
07 February 2019	2 nd Battalion	Major Stian Stormo	Operations Officer
08 February 2019	Norwegian Army Command	Oberstløytnant Karen Sofie Netland	Chief Norwegian Land Operation Centre
13 February 2019	Land Warfare Centre	Oberstløytnant Jon Vie	Chief Section for Lessons Learned
13 February 2019	Telemark Battalion	Kaptein Brage Reinaas	Operations Officer
13 February 2019	Telemark Battalion	Løytnant Hans Marius Skjærbæk	Planning Officer

Annex B: Abbreviations

BDE N	Brigade North
BN	Battalion
FERDABALL	<i>Forsvarets ErfaringsDatabase Lessons Learned</i> (the Norwegian Armed Forces Lessons Learned Database)
LL	Lessons Learned
LWC	Land Warfare Centre
NAC	Norwegian Army Command
NAF	Norwegian Armed Forces
NJHQ	Norwegian Joint Headquarters
NORA	The Norwegian Army
PXD	Post Exercise Discussion
SLL	Section for Lessons Learned, part of the Land Warfare Centre
SOP	Standard Operating Procedure
TRADOK	<i>Transformasjons- og doktrine kommando</i> (predecessor of the Land Warfare Centre)
TRJE / TRJE18	Trident Juncture 2018