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SATISFACTION OF CANADIAN ARMED FORCES REGULAR FORCE MEMBERS WITH THEIR DISTANCE LEARNING EXPERIENCES

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KIMBERLY JONES

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The future of learning.

Approval of Dissertation

The undersigned certify that they have read the dissertation entitled

SATISFACTION OF CANADIAN ARMED FORCES REGULAR FORCE MEMBERS WITH THEIR DISTANCE LEARNING EXPERIENCES

Submitted by:

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It pleases me greatly to add this contribution to the greater body of knowledge and I hope that these findings and the recommendations here within will inspire continuous improvements in the realm of distance learning in the Canadian Armed Forces and beyond. Thank you all.

-Kim Jones

Abstract

The use of distance learning (DL) as a training and education delivery method has been on the rise within the Canadian Armed Forces (CAF) as a way of optimizing funding to the training system while still maintaining a high standard. Since research has shown relationships between student satisfaction and various positive outcomes, such as training retention and readiness to transfer learning to the workplace, the satisfaction of CAF learners is an important area of inquiry. This research explored the satisfaction levels of CAF members with their DL experiences, how different variables related to that satisfaction, and how military-specific considerations affected members' DL experiences. This mixed methods research involved a sample of CAF members who had completed, within approximately the past three years, one of seven CAF professional development courses/programs that were delivered via DL or in a blended DL and classroom format. The study used a two-phase mixed-methods research design that included data collection in the form of an online survey distributed to 1310 CAF Regular Force members, which yielded 368 usable questionnaires, followed by 12 follow-up interviews. Quantitative data were analyzed using descriptive and correlation analyses, as well as factor analyses and multiple regression. Qualitative data were analyzed using coding frequency analyses and thematic content analysis, which added depth concerning CAF members' personal experiences. The findings showed a relatively high level of satisfaction, but that given the choice between delivery modes, a much higher percentage of members would choose classroom over DL. The exploration of demographic, course quality, support, and perception variables in relation to overall DL satisfaction shed some light on potential reasons for these findings. Recommendations were provided to encourage continuous improvement of CAF DL programs.

Keywords: distance learning, distance education, Canadian Armed Forces, military

Preface

As a Training Development Officer in the Canadian Armed Forces and as a distance learner for many years, I have always been motivated to learn more about what constitutes quality distance learning and what different factors contribute to a satisfying learning experience. I am pleased to share with you my research findings.

As a disclaimer, the opinions expressed in this dissertation reflect my opinions and do not necessarily represent the opinion of the Canadian Armed Forces or the Department of National Defence.

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List of Acronyms

ALQ	Advanced Leadership Qualification
CA	Canadian Army
CACSC	Canadian Army Command and Staff College
CAF	Canadian Armed Forces
CAFJOD	Canadian Armed Forces Junior Officer Development
CDA	Canadian Defence Academy
CFC	Canadian Forces College
CFITES	Canadian Forces Individual Training and Education System
CFPDS	Canadian Forces Professional Development System
CoC	Chain of Command
DGMPRA	Director General Military Personnel Research and Analysis
DL	Distance Learning
DLN	Defence Learning Network
DND	Department of National Defence
DP	Developmental Periods
DRDC	Defence Research and Development Canada
DWAN	Defence Wide Area Network
EC	Environmental Command
FNTS	Future Naval Training System Strategy
FOL	First Official Language
ILQ	Intermediate Leadership Qualification
IT&E	Individual Training and Education

JCSP	Joint Command and Staff Programme
L1	Level 1 Organization
LMS	Learning Management System
MPG	Military Personnel Generation
NCM	Non-Commissioned Members
NCMPDC	Non-Commissioned Members Professional Development Centre
OPME	Officer Professional Military Education
PD	Professional Development
PLQ	Primary Leadership Qualification
POR	Public Opinion Research
R&D	Research and Development
RCN	Royal Canadian Navy
RCAF	Royal Canadian Air Force
REB	Research Ethics Board
RMCC	Royal Military College of Canada
SPSS	Statistical Package for the Social Sciences
SSRRB	Social Science Research Review Board
TDO	Training Development Officer

Definition of Terms

Canadian Armed Forces (CAF): The unified armed forces of Canada, including the Canadian Army (CA), the Royal Canadian Navy (RCN) and the Royal Canadian Air Force (RCAF).

Canadian Forces Professional Development System (CFPDS): The CFPDS is a career-long learning and developmental system that increases the capabilities and leadership of CAF members. It includes four pillars: education, training, self-development, and experience, and is comprised of five developmental periods (DPs) that span the length of a CAF member's career. (National Defence and the Canadian Armed Forces, 2016).

Distance Learning: "also called distance education, e-learning, and online learning, form of education in which the main elements include physical separation of teachers and students during instruction and the use of various technologies to facilitate student-teacher and student-student communication." (Berg & Simonson, 2016).

Education: The provision of a body of knowledge and intellectual skill set, upon which judgement among competing facts, information and ideas can be critically examined, assessed and interpreted. This is one of the four pillars of the Canadian Forces Professional Development System (National Defence and the Canadian Armed Forces, 2016).

Employment Experience: The application and continued development of the knowledge, skills and attitudes obtained through education, training, and/or self-development in the performance of assigned roles and duties. This is one of the four pillars of the Canadian Forces Professional Development System (National Defence and the Canadian Armed Forces, 2016).

Junior Non-Commissioned Member (NCM): A NCM who holds the rank of Private (Basic) (Pte (B)), Private (Trained) (Pte (T)), Corporal (Cpl), or Master Corporal (MCpl) in the Canadian Army (CA) and Royal Canadian Air Force (RCAF); and Ordinary Seaman (OS), Able Seaman (AB), Leading Seaman (LS), or Master Seaman (MS) in the Royal Canadian Navy (RCN).

Junior Officer: An officer who holds the rank of 2nd Lieutenant (2Lt), Lieutenant (Lt) or Captain (Capt) in the Canadian Army (CA) and Royal Canadian Air Force (RCAF); and Acting Sub-Lieutenant (A/SLt), Sub-Lieutenant (A/SLt), or Lieutenant(Navy) (Lt(N)) in the Royal Canadian Navy (RCN).

Non-Commissioned Member (NCM): Any person, other than an officer, who is enrolled in the Canadian Armed Forces.

Officer: A person who holds a commission as an officer of Her Majesty in the Canadian Armed Forces.

Satisfaction: (as defined in this research in Appendix A, in relation with the participant's professional development course or program): the positive feeling a learner has when their expectations have been met with regards to their cognitive and affective needs for their training and/or educational experience.

Self-Development: Self-initiated training and/or education that refines or further develops an individual's body of knowledge, intellectual and/or professional skill sets, and attitudes that leads to improving the level of a desired competency or competencies. Self-development is normally done outside of formal professional development activities. This is one of the four pillars of the Canadian Forces Professional Development System (National Defence and the Canadian Armed Forces, 2016).

Senior Non-Commissioned Member (NCM): A NCM who holds the rank of Sergeant (Sgt), Warrant Officer (WO), Master Warrant Officer (MWO) or Chief Warrant Officer (CWO) in the Canadian Army (CA) and Royal Canadian Air Force (RCAF); and Petty Officer 2nd class (PO 2), Petty Officer 1st class (PO 1), Chief Petty Officer 2nd class (CPO 2), or Chief Petty Officer 1st class (CPO 1) in the Royal Canadian Navy (RCN).

Senior Officer: An officer who holds the rank of Major (Maj), Lieutenant-Colonel (LCol) or Colonel (Col) in the Canadian Army (CA) and Royal Canadian Air Force (RCAF); and Lieutenant-Commander (LCdr), Commander (Cdr), or Captain(N) (Capt(N)) in the Royal Canadian Navy (RCN).

Training: The provision of specific skills, knowledge and attitudes required to perform assigned tasks and duties. This is one of the four pillars of the Canadian Forces Professional Development System (National Defence and the Canadian Armed Forces, 2016).

Chapter 1. Introduction

Overview

The use of Distance Learning (DL) as a training and education delivery format has been on the rise within the Canadian Armed Forces (CAF). One of the goals of this change has been to gain resource efficiencies through decreasing the costs associated with the construction and maintenance of physical school buildings, as well as the costs associated with sending CAF trainees to the limited physical locations dispersed across the country. Further, the use of DL can often improve military members' quality of life by allowing them to study in their home locations with their families, and also increase their access to training and educational opportunities while deployed on operations.

As the use of DL in the CAF "has increased exponentially in the last few years" (Legassie, 2014, p. 34), it is timely and important to investigate the effectiveness of this delivery format. Satisfaction of CAF DL learners is seen an important aspect of the effectiveness of this delivery format as research has shown various relationships between student satisfaction and various learner and organizational positive outcomes, such as training retention and readiness to transfer learning to the workplace.

In this study, Regular Force members of the CAF who had completed various DL professional development courses were surveyed, through questionnaires and interviews, to ascertain their satisfaction with regards to their DL experiences. Data were gathered about the following: (a) CAF members' overall satisfaction with their DL experiences; (b) CAF members' preferred mode of delivery; (c) CAF members' satisfaction with quality variables of their DL courses; (d) CAF members' satisfaction with the support they received during their DL courses; (e) CAF members' perceptions about DL; (f) respondents' individual characteristics; and (g)

CAF members' perceptions regarding how military-specific considerations affected their DL experiences. Quantitative data analysis further explored relationships between the overall satisfaction of CAF members with their DL experiences with variables of individual characteristics, perceptions regarding DL, course quality, support.

The mixed methods study obtained both statistical information and qualitative data from CAF members in order to help the CAF better understand DL learner satisfaction and determine if there are issues that are of particular significance in relation to satisfaction. The findings will aid the CAF in their change management efforts with regards to increasing the use of DL and providing the CAF training system with recommendations for improvement in the DL program.

Background

The Individual Training and Education Modernization Strategy (Canadian Defence Academy, 2011) was formed through a CAF-wide training community collaboration and endorsed by the Armed Forces Council in 2011. In identifying current gaps within the CAF training system, key enablers, and objectives, the stated aim of the strategy was to create "a modernized CAF Individual Education and Training system that is agile, integrated and responsive to the contemporary environment and CAF institutional requirements" (Canadian Defence Academy, 2011, p. 10). The report also stated that the CAF modernized training system would deliver "performance oriented, learner-centric training and education at the right time to the right people to enable individual and collective performance to support operational and institutional success" (p. 10).

In 2012, the Department of National Defence (DND) and the CAF commenced an effort towards Defence Renewal. Under the leadership of the Minister of National Defence at the time, The Honourable Peter MacKay, the Defence Renewal initiative was aimed at creating a leaner

and more efficient organization. The organization would strive to do its part in reducing the Canadian deficit allowing the reinvestment of cost savings to support strategic defence operational goals, as detailed within the Canada First Defence Strategy (National Defence, 2008).

A later DND report, *Report on Plans and Priorities 2012-13*, from the Minister of National Defence included the following applicable priorities:

- Strengthening the Defence team, enabled by maximizing military and civilian potential by continuing to strengthen leadership capacity, succession planning, continual learning, and professional development (PD); and
- Maintaining Defence Affordability, which strengthens the key capabilities through the management of investments in Personnel, Equipment, Readiness, and Infrastructure (Department of National Defence, 2012, pp.12-13).

In addition to these priorities, and specifically within the Defence Team Personnel Support program activity of this report, the following plans within the area of Individual Training and Education were stated:

- Modernize the CAF Individual Training and Education System to more efficiently and effectively deliver performance-oriented, learner-centric individual training and education;
- Achieve a more performance-oriented learner-centric training, and a more collaborative and innovative Defence Team; and
- Further enhance the Defence Learning Network (DLN) [the CAF/DND learning management system (LMS)] to deliver capabilities associated with developing and managing learning content (Department of National Defence, 2012, p. 48).

About a year later, the *CAF Campus Operational Framework* (2013), an internal CAF strategy document, was issued to support the previously stated goals of the Defence Renewal initiative, the Individual Training and Education Modernization Strategy, and the *Department of National Defence Report on Plans and Priorities 2012-2013* in this area. The implementation of the CAF Individual Training and Education modernization was based on the CAF Campus multi-faceted philosophy and plan for the future. Some of the many aspects of the *CAF Campus Operational Framework* included the following:

- the creation of collaborative Learning Support Centres for course development, which are geographically dispersed, aimed at gaining efficiencies and decreasing the duplication of efforts;
- the increased use of Prior Learning Assessment and Recognition (PLAR);
- Rationalized Training Delivery leveraging external learning service providers, academia or industry, when found beneficial and practicable to do so;
- the CAF Campus Enterprise Engine, a synchronized suite of modern technological tools that act as the technical backbone supporting the CAF training system and the CAF Campus initiatives (e.g. a user interface, collaborative tools, immersive technologies, and a repository of 3D models); and
- increasing the ubiquitous and asynchronous access to learning in the CAF (Canadian Defence Academy, 2013).

These key documents provide an overview of the strategy, both internal to the CAF and from the Minister of National Defence, that were driving the modernization efforts within the CAF training system over the past decade. The increasing use of DL within the CAF is one example of these important modernization efforts. A further look into internal documents,

strategies, and policies, which indicate the past, present, and projected future states of DL in the CAF, will be presented in Chapter 2: Literature Review.

Statement of Problem

As shown, a series of DND and CAF strategic-level documents have been calling for the optimization and modernization of CAF training and education. Although DL has been used for many years in the CAF in a non-online format, such as with the early paper-based self-study modules of the Officer Professional Development Program (OPDP) dating back to the 1970s (Madsen, 1999), the use of online DL has become increasingly common for many different types of training programs. The move to increase DL, where it is practicable and beneficial, is one of many ways that the CAF has been moving towards optimizing training in support of such initiatives as Defence Renewal and Individual Training and Education Modernization.

Further, as a Training Development Officer in the CAF, I have received many anecdotal comments, both positive and negative, from military members on the use of DL in the CAF and have experienced first-hand various training and educational courses delivered online at a distance. I have heard arguments from colleagues both for and against both DL and traditional classroom modes of delivery. Some members perceive that the chance to mentor new members on the culture of the military is lost when training is done via DL, or that DL offers less hands-on experience and interaction with peers. Others believe that the younger generation feels more comfortable using technology to learn, such as with DL. Still others recognize DL as having a cost-saving potential, or that it can offer a better quality of life to members as they are able to spend more time at home with their families. The quality of instruction and the methods used also vary greatly. While there are courses that have excellent instructional design resulting in interactive and engaging methods, other courses leave much to be desired. As stated in the

CAF's Individual Training and Education Modernization Strategy, "…in many instances, DL has failed to engage students due to a lack of proper instructional design, having produced little more than electronic 'page-turners'" (Canadian Defence Academy, 2011, p. 9). My own wide-ranging experiences with DL courses have resulted in differing levels of satisfaction. Due to my own personal experience with DL in the CAF context, both as a student and as a Training Development Officer, efforts have been made in this research, as described in Chapter 3, to avoid potential researcher bias.

Student satisfaction has been shown to be an important line of inquiry in the training and educational domain as research, which will be reviewed in the next chapter, has shown relationships between student satisfaction and various positive learner and organizational outcomes, such as retention, decreased absenteeism, readiness to transfer learning to the workplace and students' intention to recommend the training to others. Learner satisfaction is a complex construct. What is satisfying to one learner, for example, may not be satisfying to another. An operational definition of student satisfaction has been created and adopted for this research. This definition was shared with participants prior to participation. Satisfaction, then, is described in this research as the positive feeling a learner has when their expectations have been met with regards to their cognitive and affective needs for their training and/or educational experience.

Both internal and external course variables can have an influence on a learner's satisfaction with his or her DL experience. Internal course variables that can influence learner satisfaction in CAF courses include instructional design elements such as the presence of clear learning objectives, the effectiveness of learner assessments, availability of effective learning resources, and effective learner interactions with their instructor, other learners, and with the content, as

well as effective and supported course technologies (Aman, 2009). In speaking to CAF members about their experiences with DL in the past, several external variables seem to potentially affect the satisfaction levels of CAF learners with regards to their DL experiences. These include the levels of support they receive from their Chain of Command, co-workers, and family; time available to devote to the DL course in relation to ongoing workplace requirements; and other work/life balance issues.

In order to improve the experience of the CAF members who study via DL, it is important to get the full picture and to understand the strengths and weaknesses of the CAF training and education system in relation to DL quality variables, both internal and external to the course, and learner satisfaction. The organization can benefit from understanding if CAF members who complete training, education, and self-initiated self-development via DL are satisfied with their experiences, as well as the reasons for their satisfaction and/or dissatisfaction with the various variables that affect satisfaction levels. The findings of this research can help the organizational leadership better understand factors related to the current state of DL in the CAF and alert leadership where changes are required. As CAF training strategies are encouraging the increase of DL in order to gain cost efficiencies, it is important to determine a baseline for learner satisfaction levels with their DL experiences and to identify areas where improvements are required to ensure learner satisfaction and associated positive learning results.

Purpose

While Individual Training and Education modernization in the CAF includes a wide array of efforts in many different areas, this research focused on the move towards increasing DL using modern Individual Training and Education delivery formats to improve training optimization and effectiveness. Phrases like “learner-centric learning,” “continuous learning,”

"ubiquitous learning," and "asynchronous learning" are terms that frequently show up in the aforementioned DND/CAF training modernization strategies. In this research I explored CAF members' satisfaction with their DL experiences and their satisfaction with course quality and support, as well as their general perceptions in reference to DL and their perceptions of the effects of military-specific considerations on their DL experiences.

Relationships were also explored between the criterion variable of overall satisfaction with members' DL experiences and other variables mentioned above, as well as various individual characteristics. While the effectiveness of DL in the CAF is an important aspect to be considered, the evaluation and validation of individual courses are regularly completed by training professionals in the CAF as phases of the Instructional Systems Design process, known in the CAF as the Canadian Forces Individual Training and Education System (CFITES). This research gathered only the perceptions of the learners with respect to different variables of CAF DL course quality.

Research Questions

As discussed in the previous section, the main purpose of this research was to investigate the satisfaction of CAF Regular Force learners regarding their DL experiences. Qualitative and quantitative data were collected in a mixed methods study in order to address the three research questions listed below.

1. To what extent are CAF Regular Force members satisfied with their DL experiences?
2. What are the relationships between student satisfaction amongst CAF Regular Force members regarding their DL experiences and their individual characteristics, their satisfaction of DL course quality, their satisfaction with support, and their general perceptions towards DL?

3. How do CAF Regular Force members perceive that military service affects their DL experiences?

Chapter Summary

This introductory chapter presented a background and overview of key DND and CAF strategy papers that supported efforts towards optimizing training. One way in which the CAF is working towards modernizing Individual Training and Education is through the increased use of online DL, where practicable and beneficial. Typically, perceived from my own previous experiences and through anecdotal discussions with colleagues, CAF members have experienced a wide array of quality (with corresponding levels of satisfaction) with respect to their DL experiences, from passive and dull courses, to those with highly interactive DL course content and methods. I also perceived internal course variables, such as the quality of the instructional design, as well as external factors, such as support from the Chain of Command, co-workers, and family, to potentially affect the learners' satisfaction towards their DL experiences.

The CAF will benefit from research that assesses overall CAF learner satisfaction concerning their DL experiences across a variety of learners in order to ascertain the strengths and weaknesses of its DL training. As such, the goals set for this research were to determine: 1) the levels of satisfaction of CAF members with regards to their DL experiences; 2) how overall DL satisfaction is related to different variables, such as demographics, general perceptions of DL and perceptions of support and course quality; and 3) how CAF members perceive military-specific considerations to affect their DL experiences.

Organization of the Dissertation

This dissertation provides background information concerning the role and continual expansion of DL within the CAF training system. A literature review is presented in Chapter 2

that provides an overview of research that has been done on the subject in the following areas: (a) an overview of research exploring the relationships among student satisfaction and learning and organizational outcomes; (b) an overview of research exploring the comparison between DL and classroom-based training; (c) variables that have been measured in relation to DL satisfaction; (d) military particularities with regards to DL; and (e) an overview of the internal documents, strategies, and policies that reflect the past, present, and projected future states of DL in the CAF. Chapter 3 details the methodology that was used to answer the research questions of this study through a mixed methods approach using questionnaires and interviews. Chapters 4, 5, and 6 present and discuss the quantitative, qualitative, and integrated data findings and analyses, respectively. Finally, Chapter 7 provides conclusions and recommendations regarding CAF DL practice and future related research.

Chapter 2. Literature Review

Overview

Much research has been done regarding learner satisfaction in post-secondary studies. As the use of DL has increased, that research has extended to include learners' satisfaction with their DL experiences and different variables that affect this satisfaction. However, little research has looked at the military population of learners and their levels of DL satisfaction. Military-specific considerations such as deployments, frequent postings, and changing operational positions, can add challenges to these learners. Support from the military Chain of Command is also a variable that could influence the success and satisfaction of military members studying via distance.

This literature review will provide the following: (a) an overview of research exploring the relationships among student satisfaction and learning and organizational outcomes; (b) an overview of research exploring the comparison between DL and classroom-based training; (c) variables that have been measured in relation to DL satisfaction; (d) military particularities with regards to DL; and (e) an overview of the internal documents, strategies, and policies that reflect the past, present, and projected future states of DL in the CAF.

Relationships among Student Satisfaction and Learning and Organizational Outcomes

Various studies have explored the relationships among training satisfaction and learning and organizational outcomes. Although some earlier research found a lack of correlation among learner satisfaction and training effectiveness, further research has, indeed, found that learner satisfaction can be linked directly, or through mediating variables, to various positive outcomes. Examples of related research, reviewed here, explored relationships among student satisfaction and the readiness to transfer learning, levels of absenteeism, retention, and students' intention to recommend the training to others.

Kirkpatrick's four-level model of evaluation (1959) identified satisfaction in training (more generally referred to as 'reactions') as the first level of evaluation. Kirkpatrick (1996) stated that learners must like their program in order to get the most benefit from it. Some research studies, however, drew conclusions that challenged Kirkpatrick's views that satisfaction has a beneficial effect on learning. Aliger and Janak (1989), for example, explored previously published research to look at correlations between Kirkpatrick's four levels of evaluation: 1) reaction; 2) learning; 3) behavior; and 4) results. Applicable to this research and based on mean sample size-weighted correlation, they found that, generally, level one (reaction), which would encompass satisfaction with training, was only slightly correlated with the other levels of training evaluation. Specifically, level one (reaction) was very weakly correlated to level two (learning) ($r=0.07$); level one (reaction) was very weakly correlated to level three (behavior) ($r=0.05$), and level one (reaction) was moderately correlated to level four (results) ($r=0.48$). While the correlation from level one to level four does appear to be moderate, it was noted that this finding was based on only one correlation that was found in one article. As the researchers admitted, due to the sparsity of examples articles found which correlated between levels of Kirkpatrick's model (12 articles with 26 correlations), any generalizations would need to be made with care.

Aliger, Tannenbaum, Bennett, Traver and Shotland (1997), performed a meta-analysis which explored a larger sample of 34 articles and 115 correlations between Kirkpatrick's levels of evaluation. For their analysis, they further divided two levels, reaction and learning, into more specific components. Level one (reaction), for example, was split into affective, utility and combined components (i.e. affective and utility together). Affective reaction captured the trainees' feelings i.e. their level of enjoyment of the training. Utility reaction, on the other hand, captured the trainees' beliefs regarding the usefulness, applicability and perceived relevance of

the training for the workplace context. Based on mean sample size-weighted correlation, their research found that utility reactions and combined reactions (affective and utility) had, what they defined as, moderate correlations with transfer (i.e. on the job performance) (r= 0.12 and r=0.16). Affective reaction, however, correlated less strongly with transfer (r=0.03). The authors stated that evaluating reactions to training is extremely important as there could be other distant variables affected by reaction, such as students' decision to attend further training sessions.

More recent articles, however, have challenged previous findings that showed a lack of relationship between learner satisfaction and various positive training and organizational variables. Endres, Chowdhury, Frye and Hurtubis (2009), for example, surveyed 277 online Master of Business Administration (MBA) students who had taken MBA courses between March 2002 and August 2004. The questionnaire was comprised of 20 questions about satisfaction on a 5-point Likert scale where answers ranged from 1 (*very dissatisfied*) to 5 (*very satisfied).* The questions fit into five different categories, which later were confirmed to fit into five factors of satisfaction, and were as follows: 1) faculty practices; 2) course materials; 3) learning practices; 4) student-to-student interactions; and 5) access or online tools. They found that some of these different factors of satisfaction predicted a range of students' intentions to recommend the course, faculty, and/or the university to others. These behavioral intentions were measured based on simple yes/no questions regarding their plans to make these three types of recommendations. Students' intentions to recommend the course to others was found to be predicted by satisfaction with faculty practices, course materials, and learning practices. Students' intention to recommend the faculty to others was found to be predicted by satisfaction with faculty practices, and, marginally, by learning practices. Students' intention to recommend the university to others

was found to be predicted by satisfaction with learning practices, by online tools, and, marginally, by course materials.

Schertzer and Schertzer (2004) proposed a conceptual model that positively related student satisfaction with university retention with mediating variables of academic fit and institutional commitment. Their model proposed that student-institution values and student-faculty values are both positively related to academic fit. Academic fit, then, is positively related to student satisfaction and commitment to the institution. Student satisfaction is positively related to institutional commitment, which, in turn, is positively related to retention. While the conceptual model was not tested, the mediating factors between satisfaction and desirables outcome (in this case, retention) are similar in nature to the following study that posited organizational normative commitment to be a mediating variable between satisfaction and training transfer and decreased absenteeism.

Mansour, Naji, and Leclerc (2017) administered a survey to employees of a large Canadian financial institute (n=578). The variable measurement tools, which included categorical questions and Likert scales, were drawn from existing research. The questions measured satisfaction with training as an independent variable, normative commitment to the organization as a mediating variable, readiness to transfer training as a dependent variable, and workplace absenteeism as a dependent variable. The mediating variable of normative commitment is generally defined as a feeling of obligation towards the organization, including a commitment to stay with and support that organization. This commitment reflects the reciprocity norm, that is, a "sense of moral debt" (Mansour, Naji, & Leclerc, 2017, p. 6) to give back to the organization that which the learner believes is owed (i.e. transferring of learning from the training context to the workplace context).

The researchers put forth three hypotheses: 1) satisfaction with training positively impacts the readiness to transfer training; 2) normative commitment to the organization mediates the relationship between satisfaction with training and the readiness to transfer learning; and 3) normative commitment to the organization negatively impacts absenteeism (Mansour et al., 2017, p. 6).

Their findings supported all three hypotheses in that a moderately positive effect of training satisfaction on normative commitment was found. As well, they found that, as hypothesized, normative commitment does enhance readiness to transfer training and it reduces absenteeism. While the direct relationship between training satisfaction, as the independent variable, and readiness to transfer training, as a dependent variable, was not significant, the addition of the mediating variable, normative commitment, supported an indirect relationship between training satisfaction and readiness to transfer learning.

The researchers stated that the limitations to this research included the fact that they used a cross-sectional survey design and, therefore, did not establish learners' long-term satisfaction with regards to training. Due to this, they were unable to claim a causal model. As well, the questionnaire derived learners' training satisfaction solely from self-reporting which limits the research scope to the respondents' level of self-analysis. Regardless of these limitations, the findings in this study support that, indeed, the "positive reactions to training create a psychological state which predisposes employees to transfer learning and to reduce deviant behaviors such as absenteeism" (Mansour et al., 2017, p. 11).

In this dissertation research, satisfaction was defined to the participants as the positive feeling a learner has when their expectations have been met with regards to their cognitive and affective needs for their training and/or educational experience. Although training effectiveness

is paramount in the CAF, there are other positive learner and organizational outcomes to which training satisfaction can lead. Examples discussed in this literature review included the readiness to transfer learning through the mediating variable of normative commitment, decreased absenteeism, higher retention through mediating variables such as institutional commitment and academic right fit, and students' intention to recommend the training and organization to others.

DL vs Classroom-Based Training

There have been many studies over the years comparing DL with traditional classroom-based courses, both for effectiveness and learner satisfaction. A well-known historical theoretical debate took place during the 1980s and 1990s between Richard Clark and Robert Kozma concerning training delivery systems. On one hand, Clark (1983, 1994) stated that the medium was a neutral carrier of the course content and method, and that the important aspect that could affect the outcome of learning, positively or negatively, was the instructional method. Kozma (1994), on the other hand, argued that as DL technologies evolved, Clark's (1983) earlier assertion was not enough as "a medium's capabilities enable methods" (Kozma, 1994, p. 20). Newer interactive technologies, for example, that enable such things as collaborative learning, can, indeed, influence learner outcomes.

Generally speaking, research has found no significant difference in learner outcomes or satisfaction between DL and classroom-based instruction. Indeed, an entire website is dedicated to supporting this conclusion (nosignificantdifference.org). Numerous meta-analyses over nearly two decades have led to this conclusion. Russell (1999) reported, using a meta-analysis of 355 studies, that there was no significant difference in learning outcomes (i.e., effectiveness) based on the mode of education delivery (traditional classroom versus DL) alone. Several meta-analyses have also looked at learner satisfaction comparing distance education and the traditional

classroom. For example, Allen, Bourhis, Burrell, and Mabry (2002) conducted a meta-analysis of 22 studies with a total sample of 3822 learners (after removing three outlier studies). These 22 studies compared learner satisfaction for distance education to the traditional classroom in higher education. The meta-analysis concluded that learners found distance education as satisfying as traditional classroom study; however, the authors added that learning style may influence a learner's satisfaction with the DL mode of delivery.

Bernard et. al. (2004) criticized the Allen et al. (2002) study as it only measured learner satisfaction. In response to this limitation, Bernard et al. (2004) completed a larger scale meta-analysis of the comparative literature, involving 232 studies, completed from 1985 to 2002, that compared distance education to classroom instruction. The meta-analysis addressed three factors: (a) learner achievement; (b) attitude; and (c) retention outcomes. Bernard et al. (2004) also compared synchronous and asynchronous DL in each of these three measures in order to see how this variable may affect learning. Overall, the comparison showed no mean difference between DL and traditional classroom; however, the extremely large variability on all measures was noteworthy. Bernard et al. (2004) argued that this variability showed that some DL courses were performing very well in all three measures, while others were performing very poorly, in comparison with the traditional classroom courses. They concluded that such wide variation of results between individual studies precluded making a firm declaration that the mode of delivery did not affect the three measures.

Bernard et al. (2004) also investigated differences between synchronous and asynchronous comparative studies and reported that asynchronous DL tended to be associated with higher achievement and more positive attitudes than synchronous DL. Dropout rates, however, were much higher for asynchronous DL than for synchronous DL. Bernard et al. (2004) called for

future research to do more than simply compare DL to traditional classrooms, urging future researchers to ask “why?” and “under what conditions?” in order to further this area of research.

In a more recent study, Colvin et al. (2014) conducted research into learning in a Massive Open Online Course (MOOC) titled 8MReV – Mechanics ReView, offered in 2013 out of the Massachusetts Institute of Technology (MIT). By analyzing student results in pre-course and post-course testing (n=1080), they found that the normalized gain in learning was substantial (0.31 +/- 0.02) and even higher than findings in previous similar research (Hake, 1998) that focused on traditional lecture-based on-campus courses (0.23), except for on-campus courses that included “interactive engagement” activities, which showed a higher level of learning (0.48). They also compared the homework performance of freshman at MIT in a similar on-campus course (n=35) to the MOOC and found no higher relative weekly improvement in comparison with the online course, even though the on-campus students had access to four hours of face-to-face weekly contact with teaching staff, access to physics tutors, the MIT library and other on-campus benefits (Colvin et al., 2014).

They stated that there are limitations to be considered in evaluating their work. The fact that there were significant differences in the characteristics of the students in the traditional classes and the MOOCs (e.g. age, different levels of education, reasons for enrolling) could have influenced the findings. The fact that the students in the MOOC were able to consult their resources (e.g. Google, a textbook) prior to answering the test questions, while the students in the traditional classrooms could not, is also a limitation. While this research appears to be a valuable report, more research in this area is recommended by the authors.

Variables Measured in Relation to DL Satisfaction

Satisfaction is a construct with a variety of meanings and interpretations. In this dissertation research it is operationally defined as the positive feeling a learner has when their expectations have been met with regards to their cognitive and affective needs for their training and/or educational experience. Kirkpatrick's four-level model of evaluation, first published in 1959, looked at satisfaction in training (also called reaction) as the first level of evaluation. In a later article, Kirkpatrick (1996) likened this first level of his model to evaluating customer satisfaction, stating that learners must like their program in order to get the most benefit from it, and that designers and instructors must make the course interesting and work to motivate learners to want to participate in the course. One way to evaluate satisfaction, according to Kirkpatrick, is through the use of anonymous surveys, where the responses can be quantified and with the addition of open-answered questions. Quality variables of a DL course, such as effective instructional methods, can influence learning and the resulting learner satisfaction. Learners' satisfaction with their DL experience can be affected by many different variables, including course-specific factors and external-to-course factors such as motivation, family support, mental and physical health, and time to devote to the educational pursuit. Much research has been done to determine what constitutes quality DL and the resultant learner satisfaction in relation to these DL course-specific factors.

Certain quality factors have been identified that can have a positive impact on DL courses. Aman (2009), and then Simpson and Benson (2013), surveyed learners to determine their course satisfaction in relation to five factors of DL course quality and in relation to faculty peer review processes. Aman (2009) administered an online questionnaire, consisting of 30 questions on a 5-point Likert-type scale, to 455 learner participants from nine community colleges in Maryland

and Oregon. He found a significant relationship in the use of a faculty peer review process for courses and the increase of learner satisfaction. A faculty peer review process, in this study, entailed peers using a rating rubric to ensure course quality and to encourage continuous improvement in DL and hybrid courses. Hybrid courses, which are also known as "blended courses," combine DL and face-to-face modes of delivery.

Simpson and Benson (2013) later used the same questionnaire as Aman (2009) as a way to further validate his research tool and to measure the five quality factors and satisfaction in relation to peer-review processes. The Aman Satisfaction Questionnaire (2009) was sent to 157 learners in upper-level and/or graduate online courses offered at senior institutions accredited by the Southern Association of Colleges and Schools (SACS), which included the Southern United States and Latin America. The open-ended questions were not added to the questionnaire, which Simpson and Benson (2013) later noted as a limitation of their study. In addition, seven quality managers and course designers were also surveyed, with the use of a different questionnaire developed by Simpson (2013), in order to gather data regarding their use of the quality management/peer review tools. While this study did not show a significant relationship between peer review processes and learner satisfaction, it did reveal a significant finding in that those with a higher comfort level with DL also had a higher level of satisfaction. Comfort level with DL was measured by asking participants to self-report their comfort level on a 5-point Likert Scale ranging between very uncomfortable and very comfortable. They stated that open-ended questions could have provided the participants the opportunity to provide additional information about their courses.

The five factors used by Aman (2009) and Simpson and Benson (2013), which had been supported previously by other research as shown, are presented in the following list: (a) learning

resources and materials (Dong, Xu, & Lu, 2009; Deubel, 2003); (b) learner assessment and measurement (Hatziapostolou & Paraskakis, 2010); (c) course technology (Bates, 2005); (d) learning outcomes or objectives (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956); and (e) instructor-learner, learner-learner, and learner-content interactions (Swan, 2001, 2002). The five factors of quality are listed in descending order (from most to least important) reflecting Aman's (2009) findings concerning which quality factors are most significant in contributing to the increase in learner satisfaction.

What constitutes satisfaction for one learner can be different for another. Cole, Shelley, and Swatz (2014) conducted a three-year study, over eight academic terms, surveying a total of 553 undergraduate and graduate learners completing business courses from the Robert Morris University in Pennsylvania, United States. Learners were solicited through email with a link to an online questionnaire. The questionnaire included questions about the learners' satisfaction with fully online courses and blended courses, and about which factors contributed to their satisfaction or dissatisfaction. The researchers used a mixed methods analysis of responses which garnered quantitative and qualitative findings. Quantitative findings were garnered using independent sample t-tests and qualitative findings were garnered through thematic analysis. Five categories of factors contributing to learner satisfaction and dissatisfaction were formed in the thematic analysis: (a) convenience; (b) interaction; (c) structure; (d) learning style; and (e) platform. Of these five, the researchers found that convenience was the most often-cited reason for satisfaction in online courses and that lack of interaction was the most commonly cited reason for dissatisfaction. Learners reported a slightly higher level of satisfaction for blended courses, that is, a hybrid of DL and classroom, over fully online courses. The study also found

no statistically significant differences in the level of satisfaction based on demographic information such as gender, age, or learners' level of study.

A similar study by Kuo, Walker, Belland and Schroder (2013) looked to identify the extent to which three influencing factors predicted DL learner satisfaction: (a) interaction (variables split into learner-learner interaction, learner-instructor interaction, and learner-content interaction); (b) Internet self-efficacy; and (c) self-regulated learning. They also looked at what effects different demographic variables had on these three factors. Their sample included undergraduate and graduate learners enrolled in online courses from the College of Education at a Western United States university. Of the 291 enrolled learners completing one of 11 courses in various disciplines, 111 completed an online survey. The researchers made use of various instruments that were created by prior researchers including: (a) the Internet self-efficacy scale developed by Easton and LaRose (2000); (b) the self-regulated scale developed by Pintrich et al. (1993); and (c) a modified instrument that the authors had used in a previous study (Kuo, Eastmond, Schroder, & Bennett, 2009) to measure interaction and satisfaction in a blended learning situation. Descriptive analysis was done using the Statistical Package for the Social Sciences (SPSS) to show the demographic information and the median scores of the five factors previously described and the learner satisfaction. Correlation analysis was performed to better understand the relationships between the types of interactions and satisfaction. Multiple regression analyses were also performed to see if the five factors, including the three types of interactions, would significantly predict learner satisfaction. A one-way analysis of variance (ANOVA) test was also performed in order to see the effect of the demographic variables on the five different predictors. The researchers found that learner-instructor interactions, learner-content interactions, and Internet self-efficacy all significantly predicted learner satisfaction,

while learner-learner interactions and self-regulation did not predict learner satisfaction. Learner-content interaction was rated as the highest predictor of learner satisfaction. The researchers concluded that, due to this fact, sufficient attention must be paid to course organization and content design.

Various examples of learner satisfaction questionnaires have been examined during this literature review, but shortcomings exist regarding their use in DL contexts. Harrison, Gemmell, and Reid (2014), in their study of learner satisfaction in a web-based dissertation course in an international context, stated that they were "unable to identify an existing validated satisfaction survey that was applicable to an e-distance learning course in an international context" (p. 196). They went on to say that they looked at previous studies about learner satisfaction to see what questions were assessed and how the questions were constructed.

In this dissertation research, different individual characteristic variables were considered in relation to DL learner satisfaction. Some of these variables included DL experience level, rank group, years of military service, age, gender, and the members' first official language. Various researchers have examined some of these variables and their relationship with learner satisfaction in DL experiences. Although no research was found exploring military-related variables correlated to learner satisfaction, such as rank or years of service or related to first official language in Canada, such research has been completed with the variables of age, gender, and learners' prior experience and comfort level in relation to DL. With respect to age, for example, Cole, Shelley and Swartz (2014), Lim (2001), and Hong (2002) found no statistically significant differences between age groups with their learner satisfaction with DL. With respect to gender, neither Cole, Shelley and Swartz (2014); Hong (2002); nor Lim (2001) found any statistically significant differences between gender and DL satisfaction levels. With respect to learners' prior

experience and comfort level with DL affecting DL learner satisfaction levels, a statistically significant relationship was found by Simpson and Benson (2013). Their research analysis showed that learners who stated that they were comfortable or very comfortable with DL were more satisfied overall with their DL course.

Military Uses of DL

The use of DL in the military often includes barriers and challenges to DL in comparison with other contexts. Unique factors affecting this group of learners include deployments on missions to other countries, potential Post-Traumatic Stress Disorder (PTSD) or mental health issues related to missions, on-call status with potential short notice to deploy, frequent postings to new cities, changing duty hours and workload, connectivity issues in operations, and the potential requirements for extensions and instructor flexibility based on operational requirements of the job.

This dissertation research study is unique in that no study was found during this literature review that specifically measured DL learner satisfaction levels of CAF members in a mixed methods format and in relation to various factors that affect the members' satisfaction. Little literature has been published in the area of DL in the military. In searching for literature about military uses of DL, keyword searches in library databases included "distance learning" or "distance education" or "online learning" + "Canadian Armed Forces" or "Canadian Forces." Research studies related to DL and the CAF population, specifically, revealed relatively few related and applicable items. The literature review did, however, identify a study completed with the United States Armed Forces that explored the military factors in relation to DL, various other related discussion papers about DL in the CAF, and a study that explored educational trends, including DL, within the CAF. In addition, a 2012 DND "Your Say" survey report, completed

by the external research company Human Resources Systems Group (HRSG) and published internally by DND's Defence Research and Development Canada (DRDC), also provided pertinent findings regarding DL in the CAF. These studies and reports are discussed below.

Murray (2013) explored the barriers and challenges of deployed soldiers in advancing their learning. He surveyed a group of 87 Army National Guard members from Texas, who were mobilized and deployed to Baghdad, Iraq as part of Operation Iraqi Freedom in 2009-2010. Using a questionnaire with open and closed-ended and demographic questions, he investigated the effects that their mobilization and deployment had on their ongoing academic pursuits. Using archival data and questionnaires distributed through an online secure survey tool during the deployment and again two years after, Murray (2013) identified some barriers and challenges of deployed soldiers in advancing their learning, including time and schedule constraints, high operational tempo, changing schedules due to travel, unpredictable work hours, and Internet connectivity issues. Murray (2013) further noted that student-soldiers' preferences for online education programs "soared" during deployment when they were on a mission in another country away from their home base (p. 67).

Legassie (2014), a now-retired Training Development Officer (TDO) in the CAF, identified several benefits associated with the increased use of DL in the CAF, including that it allowed learners to spend more time at home, decreased absences that could have a negative impact on unit effectiveness, and allowed a higher number of members to complete training without adding additional resources.

Thorne (2011), a Royal Canadian Air Force (RCAF) Officer, looked more at the personal side of DL in the CAF. As part of the findings of his master's thesis research, he interviewed 13 members and found that, in addition to the occupational, specialty, and professional development

courses offered online within the CAF, many members work towards various degrees through the Royal Military College and external universities. He stated that "the demand for ever-increasing levels of education within the Canadian Forces (CF) continues to mount" (p. 44). Reasons for this increase included that education level was considered by promotion merit boards and that some members considered educational requirements for a second career following their military service. Members often pursued DL, instead of on-campus education, due to the possibilities of unforeseen posting and deployments. Thorne (2011) further noted that while some officers were fortunate to be chosen in competitions for sponsored full-time graduate studies, many others received funding for part-time studies. Officers in the latter group had to work particularly hard to balance their work and family obligations around their educational pursuits.

Thorne (2011) also discussed the motivational factors, the risks of burn-out that many members faced as they tried to maintain "the desired balance between work, education, and family" (p. 47), and the coping mechanisms often employed. He interviewed members who had tried to maintain this balance and found that many "miscalculated the effort and time required for education and the costs they and their families would incur" (p. 49). He made recommendations that members should be helped with their decision-making and coping mechanisms with regards to their part-time education and that some internal policies on the topic of educational leave and financial repayment plans need to be re-examined. He concluded that work-life-education balance is an important factor for the organization to consider in educational policies, as it could have a great effect on learners' satisfaction with their educational pursuits, program completion rates, and even the health of its members.

In a study by Scoppio and Covell (2016), Canadian military education contexts were examined to map current trends in pedagogical approaches and learning technologies. The study included an environmental scan of applicable documents and websites. Interviews were then conducted to seek opinions about learning technology use within the CAF, including aspects of DL. A total of 14 experts were consulted via email, phone, and in-person interviews. These experts included several senior military members in key positions at various training and educational institutions, such as the Royal Military College of Canada (RMCC), the Canadian Defence Academy (CDA), the Canadian Forces College (CFC), and the Canadian Army Command and Staff College (CACSC). Using a qualitative analysis, categories were created, and main themes were highlighted related to DL and learning technologies. Findings included that learning technologies were supplementing the traditional school-house approach to learning, but that many instructors had difficulty keeping up with the pace of technological changes. Moreover, when changes in learning technologies occurred, they were often not grounded in sound pedagogical foundations. The importance of a clear vision and supporting resources was noted in the move towards educational modernization, as was the need for instructor support.

Various articles were found in which the authors discussed educational requirements at different levels for military members in the CAF (Last, 2004; Foot, 2006; Imbeault, 2011). Last (2004) focused on the higher-level degrees offered through the Royal Military College of Canada (RMCC) and the Canadian Forces College (CFC). Both of these military schools offer programs by DL and in residence. The Joint Command and Staff Programme (JCSP) is one example of a program that is offered in residence and by DL. The length of the residential program is approximately one academic year. The length of the DL version of the program is approximately two academic years. Last (2004) discussed the various levels of educational requirements for the

range of officer ranks and argued that although an educated officer corps is important, the chosen area of study is also important.

Foot (2006) discussed the programs offered at the Canadian Forces College (CFC) and the need for further transformation in the way education is done. He stated that "Everyone wishes to see the maximum output, the best value for money, and the most flexible and professional of results" (p. 14), and that it is not only the accumulation of information that is important, but that officers must create a "habit of learning" (p. 19).

Marc Imbeault (2011), the Dean of Research at the CAF's Royal Military College St-Jean (RMCSJ) in Quebec, argued that CAF officers should pursue graduate level degrees in the social sciences and that those degrees should be studied via DL. He stated that DL allows us to create interactive courses that are more effective and attractive to members.

The above three articles shed some light on the points of view of leaders within CAF educational institutions, both past and present, with regards to educational requirements for CAF officers, a view towards transformation, and the benefit of DL as a mode of delivery.

Further insight was provided by a report, in 2012, of the "Your Say" survey, contracted to HRSG by DND's DGMPRA. This survey was completed by 1730 CAF members on the topics of physical fitness, education and training, Service Income Security Insurance Plan (SISIP) financial, and religion (Budgell, Butler & Eren, 2013). Within the topic of DL, numerous findings were presented that are related to this dissertation research. It was found that 58% of respondents had completed a CAF DL course and that 92% said that they were comfortable enough with computers to be successful in a CAF DL course. In response to a question about preferred education and delivery mechanism, 15% reported to most like courses delivered entirely by DL and 49% reported that that they least liked courses delivered entirely by DL.

Approximately two-thirds of the survey respondents said that they were able to maintain work/life balance while completing a DL component of a course, that they were able to interact with instructors and get help while on a DL course and that they could interact with course peers during their DL course. Only 45% of respondents agreed that CAF courses make good use of modern technologies.

No open-ended questions were included in the "Your Say" survey, nor was any form of qualitative data collection or analysis conducted. While these findings provide relevant information for this dissertation research, noteworthy changes have taken place in the CAF DL domain since this survey was completed. These changes include, amongst others, the complete revision of the CAFJOD program, as well as substantial changes to the CAF's enterprise learning management system with the introduction of the initial capabilities of the DLN in 2012, based on the Saba platform, and the DLN 2.0 upgrade and new capabilities that were added in 2016.

DL in the CAF: Past, Present, and Future

Individual Training and Education is an important and costly business for the CAF. Extensive resources are devoted to ensuring that the CAF's soldiers and officers are well trained and educated to do their jobs. Miller (2013) stated that the annual cost of the Individual Training and Education system is approximately $1.6 billion. Due to inflation and cost increases, it is reasonable to believe that this number has even increased since that time. It is no wonder that, in a time of budgetary constraints, cost efficiencies are sought.

The Canadian Forces Professional Development System (CFPDS) is conceptualized as involving five developmental periods (DPs), which lead a member from the earliest stages of entry into the military through the ranks, supported by four pillars: education; training; experience; and self-development. The CFPDS encourages continuous learning with the aim of

developing and enhancing CAF members' capabilities and leadership (National Defence and the Canadian Armed Forces, 2016).

The CAF, and external to DND/CAF learning service providers, often make use of DL to provide courseware to support CAF members in three of these four pillars: education, training and self-development. These are defined by the CAF as follows:

- Education: "the provision of a body of knowledge and intellectual skill sets, upon which judgement among competing facts, information and ideas can be critically examined, assessed and interpreted."
- Training: "the provision of specific skills, knowledge and attitudes required to perform assigned tasks and duties."
- Self-Development: "self-initiated training and/or education that refines or further develops an individual's body of knowledge, intellectual and/or professional skill sets, and attitudes that leads to improving the level of a desired competency or competencies. Self-development is normally done outside of formal professional development activities." (National Defence and the Canadian Armed Forces, 2016, para. 26).

The *Canadian Forces Individual Training and Education System* (CFITES) is a set of volumes which provide a management framework of the CAF's systematic approach to training within the individual training and education system. The CFITES volumes describe the six phases that generally follow the completion of a needs assessment that has revealed a performance deficiency that will be addressed through training. These six phases include: (a) Analysis; (b) Design; (c) Development; (d) Conduct; (e) Evaluation; and (f) Validation. CFITES states that optimum efficiency of training is one of its fundamental principles, and that

expenditures must be controlled while ensuring that operational needs are met (Department of National Defence, 1999a.). DL is one example of a delivery strategy that can often optimize the cost efficiency of training.

The fourth volume of CFITES discusses the use of technology-based instruction, such as computer-based instruction, and various forms of DL. It states that depending on the specific training requirement, technology-based instruction can offer the following benefits:

- flexible access to instruction for learners;
- low delivery costs;
- consistency in delivery and content; and
- elimination of risk to personnel, the environment, and resources (Department of National Defence, 1999b, p. 15).

The following potential disadvantages are offered for consideration as well:

- decreased motivation due to inadequate support through feedback, encouragement, remedial action, etc.;
- learner "saturation" through overuse of a single media or method;
- high start-up costs;
- equipment failure or obsolescence; and
- incompatibility of hardware or software (Department of National Defence, 1999b, p. 16).

It goes on to state in this section that the media options must be considered from a cost-effectiveness perspective and that the use of technologies should be explored whenever there is not a clear requirement for instructor-led face-to-face training. The cost for technology-based

instruction tends to be higher in the development stage but less in the delivery stage (Department of National Defence, 1999b, p. 17).

According to the *CAF Campus Operational Framework* (Canadian Defence Academy, 2013), "ubiquitous and asynchronous access to learning represents a dramatic improvement to the CAF learning culture" (p. 54). It states that this access to learning has many benefits such as reduced requirement for formal training spaces and less dependence on formal instruction and travel. It also increases access to the required learning and self-development and increases access to instructors and subject matter experts (Canadian Defence Academy, 2013). In this, the recent policies of the CAF point to improvements that can often be found through DL in terms of creating a learning culture and in finding cost efficiencies for the various forms of professional development. Individual elements of the military, such as the Canadian Army (CA), the Royal Canadian Air Force (RCAF) and the Royal Canadian Navy (RCN) are, as well, looking towards future methods and modes of delivery. In the Canadian Army's *Advancing with Purpose: The Army Strategy (3rd edition)* (2014), for example, it states that the future Army training system must embrace innovation in their training methods.

Another example of where the CAF is showing increased support for DL can be found in the Future Naval Training System Strategy (FNTS) approved by the Commander of the Royal Canadian Navy (RCN) in July 2015. Distributed learning is listed in this strategy as a component of technology-enabled learning. DL can be considered a potential sub-set of the umbrella term of distributed learning. Distributed learning, according to the first volume of the *Canadian Forces Individual Training and Education System* (CFITES), can be delivered onsite or at a distance and it offers more flexible access to training and educational courses (Department of National Defence, 1999a.). It can be offered anywhere, anytime, such as at

specific sites, in school computer labs, in the workplace, or at the member's home. A wider body of learners can be reached where and when the learner needs it (Royal Canadian Navy, 2015). According to the authors of the FNTS, the RCN will have more accessibility to training with distributed learning, the delivery will be more flexible and scalable and there will be less reliance on training in a specific geographical region (Royal Canadian Navy, 2015). In a figure depicting preferred and acceptable technology-enabled learning components, distributed learning was depicted as preferable for academic and professional development courses and acceptable for general military and naval training courses (Royal Canadian Navy, 2015, p. 22).

The LMS used by the CAF and DND has changed over the years. WebCT was once the major platform in use in the 1990s, followed by Desire2Learn, and then Saba, which is the enterprise LMS presently in use. In an evaluation of the CAF's Individual Training and Education system, dating back to 2005, the DND's Chief of Review Services found that coordination would be required to create an e-learning strategy that was built around a common platform as not all organizations within the CAF were using the enterprise LMS. This coordination, it was stated, could potentially aid the problem of scarce training resources (National Defence/ Chief Review Services, 2005, p. III/VI). The evaluation goes on to state that the DLN offers a centralized LMS but that the various managing authorities were pursuing their own initiatives and that it was leading to duplication of efforts and funds being used inefficiently (National Defence / Chief Review Services, 2005, p. III/VI).

Coordination across all CAF/DND training authorities has improved since then. A letter was sent out from the Chief of Military Personnel to all Training Authorities and Designated Training Authorities in 2013 introducing the new DLN, based on the Saba platform. The letter stated that the DLN is an enterprise-wide environment that would manage, develop, and deliver

training. It would also provide the Defence Team with a platform for sharing knowledge and continuous learning (Millar, 2013). Major-General Millar added in the letter that the use of the DLN should be maximized by all DND Level 1s and Environmental Commands in administrating, managing, developing, and delivering training and education and that other platforms should start to be decommissioned. This letter essentially told DND Level 1 organizations and CAF Environmental Commands to make the DLN an organization-wide LMS. One present-day exception to the use of the DLN enterprise-wide is the use of the LMS Moodle, which is used by the Royal Military College of Canada (RMCC) and the Canadian Forces College (CFC). Moodle is used, for example, for forum discussions and hosting courseware packages in CFC's JCSP DL course, which is one of the programs being explored in this research. RMCC is also using Moodle to support both residential and online, undergraduate and graduate programs. Instructors at RMCC have more access to design their own courses, including making changes and additions, and they also have access to additional functionalities within the LMS.

An LMS upgrade, DLN 2.0 (Saba version 7.3.1), was introduced in 2016. The capabilities of the new DLN 2.0 included: (a) a virtual classroom that allowed for synchronous classes with screen-sharing and chat capabilities; (b) analytics and reporting; (c) sharing and collaboration tools; (d) assessment, evaluation and validation; (e) enterprise development tools; and (f) training documentation management (Military Personnel Generation (MPG), n.d.). In line with the CAF Campus' strategy to incorporate ubiquitous and asynchronous learning, the DLN 2.0 environment was anticipated to "positively change how all CAF members collaborate, learn and work together. Providing access to users anytime and anywhere" (Military Personnel Generation, n.d., p. 1). It should also be noted that a DLN 3.0 trial commenced in 2019 for a

newer version of Saba and an evaluation of the potential benefits and/or difficulties of hosting the enterprise LMS in the cloud.

Chapter Summary

This literature review has provided relevant studies and CAF strategy papers with the aim of showing: (a) an overview of research exploring the relationships among student satisfaction and learning and organizational outcomes; (b) an overview of research exploring the comparison between DL and classroom-based training; (c) variables that have been measured in relation to DL satisfaction; (d) military particularities with regards to DL; and (e) an overview of the internal documents, strategies, and policies that reflect the past, present, and projected future states of DL in the CAF. In the next chapter, the methodology that was used to answer the aforementioned research questions exploring CAF members' satisfaction with their DL experiences will be outlined.

Chapter 3. Methodology

Overview

This research explored learner satisfaction of CAF Regular Force members with regards to their DL experiences. Within this chapter, I present the methodology of the doctoral research study, along with the epistemological reasoning for the choices of methodology. The three research questions are restated, followed by details about the completed study including: (a) the research design; (b) procedure; (c) sample; (d) instrumentation; (e) data collection; (f) data analysis; (g) pilot study; (h) practicalities and feasibility; (i) the role of the researcher; (j) ensuring research rigor; (k) limitations; (l) ethical considerations; and (m) timelines.

Research Design

A mixed methods approach was used to investigate CAF Regular Force members' satisfaction levels in relation to their DL experiences and in response to the following three research questions:

1. To what extent are CAF Regular Force members satisfied with their DL experiences?
2. What are the relationships between student satisfaction amongst CAF Regular Force members regarding their DL experiences and their individual characteristics, their satisfaction of DL course quality, their satisfaction with support, and their general perceptions towards DL?
3. How do CAF Regular Force members perceive that military service affects their DL experiences?

A two-phase approach was used. In Phase 1, a questionnaire was distributed to 1310 CAF Regular Force members to gather quantitative and qualitative data in response to open-ended questions. Phase 2 involved a series of 12 interviews to obtain qualitative data that aimed to

corroborate the findings of Phase 1 and to add more depth than that obtained from the open-ended questions in the questionnaire of Phase 1. I facilitated the interviews in order to attain the desired depth through requesting the following: (1) further details in response to the answers provided to the scripted questions; (2) personal accounts of DL experiences; (3) comparisons between various DL courses the participants had taken; (4) participants' points-of-view about what worked well in DL in the CAF and what did not; and (5) how the CAF could improve upon current DL offerings.

Ontologically and epistemologically, Phase 1 of this research was tied to the positivist paradigm. Research in line with the positivist paradigm values objectivity in research and tends to place value in numerical findings, measurements, and statistical probabilities (Cohen, Manion, & Morrison, 2011). Quantitative methods are used in the positivist paradigm, including such methods as surveys and experiments (Cohen et al., 2011). The surveying of a sample of the CAF population using a questionnaire, as was done in this research, aligned well with the positivist paradigm. While valuable information was obtained through the gathering of this quantitative data, statistics alone could have potentially missed some of the salient points that could best be described by the words of the members themselves. Therefore, through the use of open-ended questions in the questionnaire and through the interviews, I provided a richer dialogue than statistics alone could have shown.

The interpretive paradigm, aligned with the qualitative side of this mixed methods research, defines truth and the different methods used to find truths differently than in the positivist paradigm (Cohen et al., 2011). Ontologically and epistemologically speaking, the interpretive paradigm sees "knowledge as personal, subjective and unique" (Cohen et al., 2011, p. 6). Qualitative methods, in line with the interpretive paradigm, often includes methods such

as interviews and focus groups. Interviewing CAF members about their DL satisfaction and experiences, such as was done in this research during Phase 2, sought knowledge from the point of view of the participants in a personal, subjective, and unique way and, as such, aligned well with the interpretive paradigm. Interviews were semi-structured to allow for potentially unexpected, yet valuable, themes to arise during discussions that I had not originally foreseen.

In this mixed methods study, I took advantage of two seemingly opposing, yet complementary, paradigms. Mixed method approaches, according to Cohen et al. (2011), allow for further meaning to be probed from data, can aid in the corroboration of data, and can add richness to the data. Valuable and significant statistical findings were drawn from the quantitative component of this research and then expanded upon and further explained using the qualitative component. The Phase 1 results informed the discussions that took place during Phase 2. The interviews added the words of CAF members, provided real-life stories and experiences, and added richness to the findings.

While developing my research methodology, I recognized and considered the controversy surrounding mixed-methods research designs. Many once held the view that quantitative and qualitative methods were completely incompatible and "akin to mixing apples and oranges" (Denzin, 2008, p. 317); however, eventually, a complementary view emerged and gained acceptance that multiple different methods, and even different paradigms, could be used successfully in a mixed methods study (Denzin, 2008). By mixing these two paradigms and methods, a more complete exploration can be accomplished and, by doing so, more valuable and complete answers to the research questions can be found. Based on the benefits of mixed methods research discussed in Denzin (2008) and Cohen et al. (2011), I expected that the additional time and effort involved in completing this research in two phases, a quantitative and a

qualitative phase, would yield a richer and more complete set of results. This expectation was strongly confirmed throughout the data analysis and results documentation steps of my research journey.

Procedure

In Phase 1, an invitation with a link to the questionnaire was distributed to 1310 CAF Regular Force members via internal email during the week of 7 May 2018. The questionnaire, as shown in Appendix A, included closed and open-ended questions, as well as questions on a 5-point Likert scale. Respondents were asked about their overall satisfaction with their DL experiences in the CAF, information about individual characteristics, their satisfaction with course quality and support variables in a professional development course/program in the CAF, their general perceptions of DL and about how military-specific considerations affected their DL experiences. Open-ended questions were added to derive personalized input from the respondents to gain further insights into their responses to the closed-ended questions. At the end of the questionnaire, a request was made for an interview, in person or by videoconference. Volunteer participants were asked to forward their name to me and which course/program they had completed from a provided list via an email address that was provided. A follow-up reminder email about the questionnaire was sent to potential participants on 31 May 2018, a few weeks following the initial email invitation.

After all the questionnaires had been returned and I had completed the initial analysis of the Phase 1 data, Phase 2 interviews began. Of the 22 members who volunteered to participate, I purposely chose 12 members ensuring that I would have representation from all the seven courses/programs, as well as participants who represented different demographics such as rank groupings, gender, and age categories. I prioritized face-to-face interviews with those in my

geographical location to facilitate the observation of body language during the interviews, which can be more difficult to perceive with the use of video or teleconference. Interviewing to the point of saturation, inclusive of a wide range of members' positive and negative DL experiences, I coordinated and conducted 12 interviews in total with CAF members during the summer of 2018.

Eight interviews were conducted in person in the National Capital Region and four were conducted at a distance using Skype, teleconference, and the DND videoconference system. Eleven of the interviews were conducted during regular working hours and one was held during the evening hours due to the participant's preference and busy work schedule. The semi-structured interview questions are shown at Appendix B. I was flexible with the questions, adding in additional questions at times, to account for newly acquired information. The predetermined set of questions guided the interviews, but additional probes were used to facilitate discussion and add detail to the responses. Qualitative methodology is seen as more fluid and flexible than quantitative methods (Bryman, 1984) and I made use of this flexibility to allow the interview discussions to develop organically and, in doing so, novel and unexpected findings were often discovered. My goal was to obtain as much rich, thick descriptions as possible through the interviews, including accounts of personal experiences.

The interview questions focused on each participant's DL experiences and their overall satisfaction with those experiences, as well as questions about course quality and support, general perceptions of DL, military-specific considerations, and how various factors affected the participant's satisfaction with their DL experiences. The participants were told that they were free to end the interview at any time and informed consent was obtained. The length of the interviews ranged from 14 to 52 minutes. The interviews were audio-recorded, and then

transcribed to be coded for thematic analysis. Each transcription was verified and approved for use by the participants.

The invitation sent to potential participants was bilingual and the questionnaire was available in both English and French. The interview moderator guide was translated to French and emails to interview volunteers asked in which language they would like their interview to be conducted. No interviewee requested the interview to be held in French; therefore, all interviews were conducted in English.

Sample

This study involved the population of CAF Regular Force members who had completed a CAF professional development course offered wholly or partially by DL. In 2017, the CAF reported that there were approximately 68,000 Regular Force members (Department of National Defence, 2017). Although an exact number of members who have completed a DL course is not known, the percentage is very high because all Officers in Developmental Period 2 (once promoted to Captain or Lieutenant (Navy)) must complete the Canadian Armed Forces Junior Officer Development (CAFJOD) program as a common requirement and this program is delivered through DL. The same is true for the Non-Commissioned Members. During their Developmental Period 2 (once promoted to Corporal), the Primary Leadership Qualification (PLQ) course is a common requirement and this program is delivered in a blended format including a residential and a DL portion.

The sample and sampling strategy were overseen by the DND due to the nature of the dissertation research study. It was determined during the DND internal Social Science Research Review Board for this study that a sampling frame would be used that would focus on Regular Force members who graduated from one of a series of CAF professional development courses/

programs within a specific time frame. The time frame later determined was between January 1, 2015 and March 26, 2018, when the sample was drawn. The courses in the sampling frame for this research included the following: 1) Canadian Armed Forces Junior Officer Development (CAFJOD) (N=1343); 2) Non-Commissioned Member Professional Development (NCMPD) – Primary Leadership Qualification (PLQ) (N=4506); 3) NCMPD – Intermediate Leadership Qualification (ILQ) (N=1820); 4) NCMPD - Advanced Leadership Program (ALP) (N=1010); 5) NCMPD – Senior Leadership Program (SLP) (N=333); 6) NCMPD – Senior Appointment Program (SAP) (N=72); and the 7) Joint Command Staff Program (JCSP) (N=149). A description of these courses/ programs can be found at Appendix F.

The total population of this sampling frame was 9233 members. I originally requested, as supported by the DGMPRA methodologist and statistician, that 1250 CAF Regular Force members would receive this questionnaire invitation with an expected response of n=392. The expected response rate was based on historical DGMPRA findings of response rates based on members' years of service (YOS) in the military and based on the YOS of the population of those who had graduated from the identified courses/ programs in the sampling frame population. The actual number of members surveyed was dependent on other organizational priorities, as there are limits in place as to how many surveys a member can receive in a year. This originally proposed number of participant invitations, considering the expected response rates, aimed to provide a margin of error (MOE) of 5%. At the time of the request, it was understood that the actual detailed list of members who would receive an invitation to participate was dependent on the organization's ability to support the sample size requested.

After the proposal for this study was approved, DGMPRA provided me with a list of 1319 randomized potential survey participants within the sampling frame, with their corresponding

course/program and their email addresses to help enable the distribution of questionnaires. I anticipated that with this list I would have enough participants to attain a sample within the 5% MOE with a 95% confidence level. Due to some missing email addresses and several full email boxes of potential participants, a total of 1310 survey invitations were sent out. A total of 368 returned questionnaires were retained after data cleaning, which was considered enough to achieve the desired sample. The number of invitations sent and response rates for each course/program along with a detailed descriptive profile of the sample is presented in Chapter 4.

At the end of the questionnaire, I included a request for interview participants. The goal of this request was to obtain at least 10 volunteers with potentially more interviews being completed if I received more responses and if I did not believe that the point of saturation had been met. I expected that the 10 interviews, in addition to responses from the open-ended questions in the questionnaires, would provide saturation in that the most salient points would surface and be covered sufficiently.

Using a purposive sampling scheme and to achieve maximum variation of participants for Phase 2, I requested in the interview invitation at the end of the questionnaire that volunteers email me and include which course from the list of targeted courses they had completed. This information, along with the rank and first name identified in their email address, gave me enough information to sufficiently deduce whether the volunteer was an Officer or a Non-Commissioned Member, their gender, and approximately how many years of service they had completed (i.e., a Junior Officer would complete the CAFJOD program and a more Senior Officer would complete the JCSP program).

When the questionnaire closed on the 3 July 2018, I was pleased to have had received 22 offers from CAF members to participate in the interviews. In choosing from this list of 22, I

purposely ensured that I would have enough representation from the various courses and demographic variables, and I prioritised face-to-face interviews with those in my geographical location. I interviewed to the point of saturation, ensuring to have a good representation of members with positive and negative DL experiences. I coordinated and conducted 12 interviews with CAF members during the summer of 2018.

Instrumentation

The research instruments that were used in this research are found in Appendices A and B. During the literature review various questionnaires were explored, including Aman's (2009) Learner Satisfaction Questionnaire that was later also used by Simpson and Benson (2013), in order to consider what should be included in the instruments for this research. Many of my questions, surrounding the variables of course quality, were inspired by the quality factor questions used by Aman (2009). For the remaining variables, I decided to create my own tools specifically aligned to my research questions and, often, uniquely pertinent to the military population. The items regarding CAF member perceptions of DL (in Appendix A) were created based on some CAF members' perceptions that I had anecdotally heard about during my years in the Training Development Branch of the CAF.

For Phase 1, a questionnaire was developed that included 5-point Likert Scale questions ranging from 1 (*very dissatisfied*) to 5 (*very satisfied*) in some questions and ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) in others. Both styles of Likert Scale questions had a neutral mid-point. These questions gathered ordinal data concerning the learners' level of satisfaction, both overall and in regard to different variables that could affect overall satisfaction and concerning the learners' level of agreement concerning a range of perception statements regarding DL. Closed-ended and multiple-choice questions were included to identify different

factors such as demographic information, the level of experience the learner had with regards to DL, and which delivery format the learner would choose, given the choice, in the future. Open-ended questions were also included, as recommended by Simpson and Benson (2013), as they considered the lack of open-ended questions to be a limitation in their study in that learners did not have the opportunity to provide additional information about their courses. I included these open-ended questions in order to allow learners the opportunity to add comments about such areas as their greatest DL satisfiers and dissatisfiers in the CAF, how military factors have affected their DL experiences, and what they think the CAF could do to increase the satisfaction levels of CAF members with regards to DL courses.

For Phase 2, a semi-structured interview guide was developed. Many of the questions in the interview guide also appeared in the questionnaire and were repeated to corroborate findings and gain depth to the responses. I started by asking information about the CAF learner, for analysis, including their experience with DL in the CAF. The goal of the interview guide was to facilitate a rich discussion in order to gain deeper insight into the factors that act as satisfiers and dissatisfiers of CAF learners towards their DL experiences. I aimed to lead the discussion in a direction to attain the personal feelings and experiences of the learners, but I also allowed fluidity of topics concerning DL in the CAF and this aided in gaining new and sometimes surprising insights.

Clarity of the research instruments was assured during the pilot stage of this research, as is described below in the pilot study description. Any lack of clarity found in the research instruments, including on the questionnaire and in the interview guide, was rectified prior to the distribution of the questionnaire to the sample and prior to holding the interviews. A further discussion on ensuring validity and reliability of the instruments is discussed in a section below.

Analysis of the effectiveness of the questionnaire formed part of the final research analysis and these reflections conclude the integrated results and discussions found in Chapter 6.

Data Collection

In Phase 1, requests for participation were sent out to CAF Regular Force members from my internal CAF email account. The email had a link to a secure online questionnaire, which is shown at Appendix A. Responses were sent to a secure survey response repository on a Government of Canada server located in Canada. My internal email address was provided at the end of the questionnaire requesting contact information and the DL course/program completed be sent to me via email if an interview would be agreeable to the participant.

In Phase 2, participants were contacted and a time and place for the interview established. If the participant lived in the National Capital Region, the interview was held in the building where the participant worked to ensure convenience for the participant. If the participant lived elsewhere, an appointment was made for a video or teleconference interview at the convenience of the participant. The interviews were audio-recorded and then later transcribed. The audio-recording was done via the use of an audio-recording device and a paid assistant transcribed the interviews while listening to the recordings. Only code names were used to identify the participant in the audio and paper files, so the transcription assistant did not have access to the participant names. I verified and revised all transcripts by listening to the audio-recordings. After the interviews were transcribed and verified, I returned the transcripts to each participant for their further verification and approval for use in order to ensure that the transcript was accurate to the participants' words.

Researcher notes, including my impressions, thoughts, and insights about the interviews, were included in my reflexive journal as part of the data collection. Data were stored on my

personal and workplace computers and secured with a password. Following verification of transcripts, all audio files were deleted and only the written transcripts with code names were retained for the data analysis phase.

Data Analysis

The data analysis of this research took place in two phases: the quantitative phase and the qualitative phase. With the Phase 1 questionnaires, the following types of analyses were completed: (1) frequency and percentage distributions; (2) crosstabulations; (3) Spearman rank order correlation analysis; (4) exploratory factor analysis; and (5) multiple linear regression analysis. The Statistical Package for the Social Sciences (SPSS) software was used to conduct these analyses of the quantitative data. Quantitative measures were based on the variables found in the questionnaire at Appendix A including questions 1 (overall satisfaction with DL experience), 2 (course quality variables), 3 (support variables), 6 (perception of DL variables), 12 (choice between DL and classroom variable), and 14-19 (demographic variables). Open thematic coding was the method of analysis used in the qualitative phase of this research and the software NVivo was used to aid the analysis of the qualitative data. The qualitative data that were analyzed included the responses to the survey open-ended questions, the interview transcripts, and the researcher interview notes.

Quantitative analysis. Survey questions had categorical answer choices, such as with demographics and multiple-choice questions, or the answers were based on a Likert Scale, either in terms of levels of satisfaction, such as the members' overall satisfaction, or levels of agreements, such as with perception statements regarding DL. Although debate exists in how Likert scale data can be analyzed (i.e., whether or not it can be considered continuous with intervals on a normal distribution) (Jamieson, 2004; Carifio & Perla, 2007), I considered the data

from the Likert scales to be ordinal in the descriptive correlation analysis, without assuming a continuous normal distribution between points. In order to conduct further analysis beyond descriptive, an assumption was made that the data was continuous, with intervals on a normal distribution. This assumption enabled the use of multiple regression analysis, a parametric test for exploring whether certain variables predict overall DL satisfaction.

Descriptive analyses, consisting of frequency and percentage distributions, crosstabulations and correlations are forms of descriptive analysis that are appropriate for the analysis of ordinal data (Cohen et al., 2011). Members' overall satisfaction with their DL experiences acted as the criterion variable and there were four main categories of variables that were tested in relation to overall satisfaction: (1) individual characteristics; (2) satisfaction with course quality factors; (3) satisfaction with support factors; and (4) perceptions in relation to DL. Descriptive analysis, in the form of frequencies and percentages, was also used for an item that inquired to the choice participants would make if they were given the option between DL and classroom.

A variety of crosstabulations were completed and analyzed to shed further light upon the relationships between the overall satisfaction of DL in the CAF variable and other variables. Several of the demographic variables were of nominal data, namely gender, first official language, rank group and most recent DL PD course completed, and so, crosstabulations were presented in the main body of the report for additional analyses as the Spearman's correlation analysis could not be completed for the nominal data. Due to lengthiness, the rest of the crosstabulation tables are presented in Appendix I for further exploration. Each crosstabulation is displayed in table format followed by an analysis of the results allowing for the examination of trends within the sampling frame. The results are described below each table as a measure of combined level of overall DL satisfaction (including somewhat satisfied and very satisfied) for

the different cross-sectioned variables that were explored. These analyses allowed for data exploration beyond frequencies and percentages alone but provided less in-depth and sophisticated analyses than what was provided in the correlation and predictive analyses for other variables, which are detailed in the next paragraphs. A sample of crosstabulation findings, with regards to the nominal demographic variables, is presented within the quantitative findings chapter, while further crosstabulations (e.g. regarding variables of course quality and support perceptions with overall DL satisfaction), can be found at Appendix I.

Correlation analyses are used to determine relations between variables. Stronger correlations between different variables do not necessarily mean that one variable causes the other but, in some cases, may suggest that possibility. In Chapter 4, correlation analyses will be presented that make use of Spearman's rank order correlation testing between the covariable of overall DL satisfaction in the CAF and covariables that include demographic factors, perceptions of different course quality factors, perceptions of member support during the most recently completed professional development course/program completed by DL, and general perceptions regarding DL. This form of correlation testing was chosen as it is an appropriate method of analysis to measure the degree of association when the variables include ordinal data (Cohen et al., 2011), such as was garnered from the 5-point Likert scale used in this study. Prior to the analyses, the level of significance for this research was set at 0.05. N/A [not applicable] responses were counted in all cases as missing values and led to some variance in the sample sizes for each variable.

Guidelines for determining the strength of correlations, or effect size, I have found, are often different from study to study and dependent on the area of investigation. According to Hemphill (2003), "it seems too simplistic to have a single set of empirical guidelines for

interpreting the magnitude of correlation coefficients" (p. 79). He also stated that "empirical guidelines for interpreting the magnitude of correlation coefficients are, to some extent, artificial" (p. 79). After reflecting on the variety of guidelines I had found and on Hemphill's previous statement, I decided that, for this research, strictly following a "rule of thumb" for effect size, was not necessarily beneficial. For this research, I have documented the effect size for each correlation coefficient and roughly interpreted the strength of the correlations based on the guidelines described in Cohen et al. (2011, pp. 636 – 637): 0 to -/+0.20 very weak; -/+0.20 to 0.35 weak; -/+0.35 to 0.65 moderate, -/+0.65 to 0.85 strong; and over -/+ 0.85 very strong.

Although the assumption that the Likert scales yielded ordinal data in the initial Spearman rank order correlation analysis, in order to enable further predictive analyses, the data was treated as continuous after findings that comparisons between Pearson's and Spearman's correlations were similar.

Factor analyses were completed based on the Principle Component Analysis (PCA) method to enable data reduction. The questionnaire contains three groups of questions that were further explored: 13 on course quality variables; 3 on satisfaction regarding support variables; and 26 questions on perceptions towards DL. Since Likert scales were used for each of the three groups of questions (level of satisfaction for quality and support measures and level of agreement for the attitude towards DL measures), factor analyses were completed separately for each three set of questions. As the demographic variables did not show much correlation with overall DL satisfaction in the previous section, it was decided that no factor analyses or predictive analyses of these variables would be completed.

Factor analyses were completed applying all applicable answers (AA) variables which is recoding all not applicable (N/A) responses to 'system missing' in SPSS. Repeated Measures

(RM) analyses, where all N/A questions were replaced with mean values for all variables in SPSS, were completed as well. Pairwise correlation found the AA and RM analyses outcomes were virtually identical. To avoid potential bias created using RM, only AA analyses are presented within Chapter 4.

Multiple regression analysis was used to address research questions and see how a variety of variables affect overall DL satisfaction. Regression analysis uses a model as displayed below:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \ldots + \beta_n x_n$$

In this model, Y represents the dependent or criterion variable (i.e. overall DL satisfaction in this research); β_0 is the intercept (value of Y when all X= 0); and $\beta_{'s}$ are the regression coefficients of the independent variables (i.e. the variables related to course quality, support and DL perceptions in this research).

The null hypothesis, set for every independent variable, including within the course quality, support, and perceptions regarding DL variables, is that the regression coefficient does not significantly differ from zero. The alternative hypothesis confirms that there is such a difference, meaning that the independent variable affects the dependent variable. If alternative hypotheses for certain independent variables are accepted, then there is support that those variables influence the outcome of overall DL satisfaction.

It can be said that for a small β_i, there must be a big change in x_i to notice a change in the dependent variable Y. On the other hand, if a coefficient is significant, a small change in the corresponding predictor would lead to a noticeable update in the outcome, i.e. independent variables with significant regression coefficients meaningfully influence the satisfaction of the overall DL experience.

Multiple regression analyses were completed on the seven factors identified in the factor analysis, as well as the remaining individual independent variables following the reduction, in order to explore which factors and variables significantly predict the dependent variable of overall DL satisfaction and then to rate which of the seven factors had the greatest influence on the overall DL satisfaction.

Qualitative analysis. The qualitative phase of the data analysis followed the Phase 2 interviews and included the data from the open-ended questions, the interview transcripts and researcher notes. Upon reflection, I decided that all three of these sources of qualitative data should be combined in one thematic coding analysis. The questions asked in the open-ended questions of the survey were very similar to the questions asked in the interviews. The main difference was that, in general, there was more depth and personal examples in the interview data due to the time allotted to the interview and probing questions. The combined qualitative data produced a rich and diverse data set for the thematic coding analysis.

All interviews were audio-recorded, transcribed, and verified with the participants for accuracy. The transcripts and researcher notes from the interviews, along with five of the nine open-ended question data (from questions 5, 7, 8, 11 and 20 as found in Appendix A) collected from the questionnaires, were analyzed using open-coding which involves a process of creating codes, categories and then themes from raw text (Cohen et al., 2011).

The coding process involved reviewing transcripts, breaking text down by section (such as by lines, paragraphs, or units of text), analyzing these sections, and then categorizing them under themes that described the text (Cohen et al., 2011). Through inductive analysis, I allowed labels to evolve organically based on the interview data and the responses to the questionnaire open-

ended questions with the aid of the qualitative software tool NVivo. Key quotes that demonstrated the various categories were chosen to add vividness to the findings.

Five of the nine open-ended questions (from questions 4, 8, 9, 10 and 13 as found in Appendix A), such as regarding the biggest satisfiers and dissatisfiers of DL in the CAF, were also coded separately for coding frequency analyses. According to Maxwell (2010), "prominent qualitative researchers… have supported the inclusion of… simple counts of things to make statements of "some", "usually," and "most" more precise" (p. 475). These numbers should not be considered statistically significant, as one would strive towards in quantitative analyses, but merely complementary information to help interpret the qualitative findings. As Maxwell (2011) asserts, in relation to qualitative analyses, "numbers can't *replace* the actual description of evidence but can provide a supplementary type of support for the conclusions" (p. 480). These statements guided the presentation of the qualitative coding frequency analyses within Chapter 5.

Pilot Study

A pilot study was conducted in order to validate the research tools, both the questionnaire and the interview question guide. Six colleague volunteers, three Anglophones and three Francophones, were recruited to complete the questionnaire in their first official language as a trial. Feedback on the clarity of the questions was obtained and used to adjust the questionnaires as required. Data from the pilot questionnaires led to a trial analysis of the quantitative data in Statistical Package for the Social Sciences (SPSS) before moving on to the Phase 2 pilot study of the interviews.

Three colleagues were then asked to take part in the pilot interview phase. This part of the pilot study gave the researcher a better understanding of the potential directions that the

interview discussions could go. These pilot interviews led to some initial ideas regarding the potential themes that could arise from the coding of the interview transcripts.

Practicalities and Feasibility

In 2016, I submitted an initial short-form proposal for this research to the Research and Development (R&D) section of Military Personnel Generation (MPG) in Kingston, Ontario. It was considered and then endorsed by the MPG Research Committee on 19 August 2016 as a research requirement. In my previous position at the Director General Military Personnel Research and Analysis (DGMPRA), I requested permission to pursue this research as the dissertation topic for my doctoral degree. This request was approved, and it was determined that the project would be overseen internally by a defence scientist at the Director Research and Development Canada Toronto (DRDC TO). The originally approved purpose and research questions have evolved somewhat, mainly due to the literature review findings, feasibility and perceived research value; however, the main proposed effort remains intact. The original proposal, titled "Satisfaction Levels of CAF Learners with their Distance Learning Experiences," stated that the research would yield a report of findings based on quantitative and qualitative research (surveys and interviews) obtained from a sample of CAF members across a spectrum of learners and learning situations.

This research also required approval by the Deputy Minister of National Defence as it was classified as Public Opinion Research (POR). POR is defined within the Government of Canada as the "planned, one-way systematic collection of opinion-based information from the public, private individuals, and representatives of businesses or other entities by or for the Government of Canada" (Government of Canada, 2016, para 2). This type of research includes such data collection methods as focus groups, interviews, and surveys. A yearly submission is

sent to the Deputy Minister of National Defence, through the Director General Military Personnel Research and Analysis (DGMPRA), for approvals each spring. In spring 2017, I sought approval through the Public Opinion Research (POR) process to survey and interview members of the CAF and was granted approval in summer 2017.

A Memorandum of Understanding (MOU) was also created and signed between me, DGMPRA, and my academic supervisor. It outlined my responsibilities (e.g. restrictions in the use of data provided to me and the provision of a scientific letter or report summarizing my findings to be submitted for publishing by Defence Research and Development Canada (DRDC)) and the support that DGMPRA would provide me (e.g. survey creation in the Snap software, translation support, and the names and email addresses of potential participants within the sampling frame). A copy of this MOU can be found at Appendix E.

Role of Researcher

I am a Training Development Officer at the rank of Major in the CAF. Personally, I have completed all my post-graduate degrees by DL, including two master's degrees, and, during this research, was working to complete a doctoral program via DL. I have completed many military courses by DL and have been mostly pleased overall with my experiences. Although I feel favourable about most of the experiences that I have had with DL, I am aware that others have had experiences that were less positive with DL due to poor course quality factors and/or conflicting work priorities. In my role as researcher, I attempted to be objective and to avoid having any of my own biases affect the findings.

In Phase 1, I was an objective collector of data. I recruited the participants through an email invitation to a list of CAF members that was provided to me by DGMPRA. I collected the data and used statistical methods to analyze the quantitative outcomes.

In Phase 2, I presented as a Training Development Officer in the CAF and personally interacted with participants in the interview framework, either in person or via teleconference or videoconference. After years working in the domain, I became part of the discussion, along with my own personal beliefs and experiences. It has been argued that it is inevitable that the researcher will have some level of influence on the participant and the resulting data (Cohen et al., 2011). That being said, it was crucial that I strived to minimize this influence and my own bias in order to ensure research validity. I strived to do this during Phase 2 through four main efforts: 1) using methods of bracketing (Tufford & Newman, 2012); 2) keeping an audit trail; 3) verifying interview transcripts with participants; and 4) enabling peer scrutiny. These efforts I used to decrease the influence of researcher bias are more thoroughly discussed in the following section focused on the subject of ensuring research rigor.

I gathered the data from the two phases of the research, analyzed, and shaped it to present in a clear and valuable way. I did not only present the raw data in this report; I also included a narrative to organize the data for the readers. Additionally, I made some recommendations in this report based on the results of the integrated data analyses and on preferred practices in the DL field.

Ensuring Research Rigor

The term rigor refers to something being "done in a strict, thorough way" (rigor, n.d.). Ensuring research rigor is important as, without it, it has been argued that "research is worthless, becomes fiction, and loses its utility" (Morse, Barrett, Mayan, Olson, & Spiers, 2002). Research rigor is often ensured through considerations of reliability and validity. Additional terms such as trustworthiness and credibility are often used in reference to qualitative research. In order to ensure research rigor, numerous methods were employed throughout the phases of this research.

Methods used in relation to the mixed methods research overall, and then to the quantitative and qualitative phases specifically, are discussed below.

Mixed methods. Striving to maximize validity and reliability in research is vital to each phase of mixed methods research. As validity and reliability are commonly addressed in different ways in quantitative and qualitative research (Cohen et al., 2011), I will discuss below some of the ways that I ensured validity and reliability throughout the research and then, during the qualitative and qualitative phases specifically.

Mixed methods research inherently provides methodological triangulation, the use of more than one method of data collection, which can help to ensure validity of research (Cohen et al., 2011). Methodological triangulation allows the researcher the ability to confirm the strength of their findings from one method to another, or alternatively, help them to determine that the method itself may have contributed to their findings. The fact that this research used two different methods of data collection allowed for methodological triangulation and greater confidence in the findings. This is due to the fact that the two phases correspond to and confirm each other.

For both the quantitative and qualitative phases of this research, the research tools were tested in a pilot study, as was described in a previous section. The pilot study helped to ensure validity of the research instruments. Any lack of clarity, including within the questionnaire and the interview guide, was later revised based on the feedback from the participants. These revisions were made prior to the mass distribution of the questionnaire and prior to the conduct of the subsequent interviews. In the following subsections, actions that were taken to specifically address validity and reliability in the quantitative and qualitative approaches of this research will be discussed.

Quantitative phase. There are many factors to consider when ensuring validity and reliability in quantitative research. Face validity, internal validity, content validity, construct validity and external validity are some examples that will be discussed below.

Face validity in research using questionnaires refers to whether the questions asked look like they are measuring what they are meant to measure, and it can include issues of readability, layout and clarity of the questionnaire (Cohen et al., 2011). It focuses only on the look of the questionnaire and whether it would appear valid to the participant. This aspect of validity was addressed through gaining feedback from colleagues and advisors and modelling my format after other such examples used by researchers in my organization. Credibility and face validity were strengthened by the fact that I used the organizational template and software for surveys, through the help of the survey development support team at DGMPRA, and it was in a format that would be recognised by many of the participants from previous participation in organizational questionnaires.

Internal validity, in terms of this research, refers to the extent that the research instrumentation and resulting data effectively answered the research questions (Cohen et al., 2011). I devised questions that were easy to understand on a simple Likert scale. I had research colleagues review my questions and provide feedback helping me to strengthen my choice of wordings, avoid leading questions and extraneous qualifiers. Any lack of clarity was further addressed following the pilot phase when six volunteers completed the questionnaire and provided feedback.

Content validity is demonstrated when the research instrument covers entirely the research objective (Cohen et al., 2011). In my research, content validity was assured in that the items in the questionnaire covered the full range of what was measured and that all my research questions

could be fully answered by these items (Cohen et al., 2011). Construct validity is ensuring that constructs within the research are well measured by the research instrument (Cohen et al., 2011). The main variable within this research is satisfaction with DL experiences. Although I determined this satisfaction with one straightforward question asking the participants to rate their own satisfaction on a Likert scale, how one defines satisfaction could differ between two participants. To strengthen the construct validity, I defined the abstract concept of DL satisfaction as a primer within the questionnaire to clarify the meaning within this research to the participants.

External validity is related to the extent that research can be generalized to the population outside of the specific sample used (Cohen et al., 2011). As I used a sampling frame of CAF members who have graduated from specific programs and courses in the past three years, the population to be considered is the 9233 members who belonged to that sampling frame and not the full population of the CAF. For example, I purposely did not survey any members from the Reserve Force, so therefore, I would not be able to generalize my findings to that portion of the CAF. As well, no CAF members holding the rank of private or of any General Officer/ Flag Officer ranks (e.g. brigadier-general, rear-admiral) would be amongst the graduates of the sample frame courses in the past three years, so generalizability to the entire CAF population was never a goal of this research. Due to the randomization within the sampling frame, however, some generalization within the sampling frame population is possible. As for the qualitative research, it has been argued that the responsibility for generalization evaluations rest with the audience rather than the researcher (Larsson, 2009). In this research, I have provided a thick, descriptive narrative and a relatively large sample of voices across a variety of demographics in

my best effort to showcase a collective voice that will allow for comparisons within the sampling frame.

As the organization had other priorities and restrictions on the number of surveys that can be distributed each year, the number of those who received my survey was limited to the number that I could be provided. Efforts were made to maximize response rates of the sample provided to me to ensure a sufficient return. These included stressing the organizational value of the research within the invitation and sending out a reminder email to potential participants a few weeks following the initial invitation.

Reliability in quantitative research refers to the possibility of replicating results given the same methods of data collection. Pertinent factors in quantitative reliability are related to the situation, the researcher, the participants and the instruments used (Cohen et al., 2011). This research strived towards reliability in the quantitative phase by ensuring that all participants received the same email invitation, instructions and link to the same instrument, that they were randomly selected from the sampling frame by someone other than myself, and that the data for each participant was treated the same. Email invitations, instructions and questionnaires were provided in both official languages and the English versions of these were translated to French by an official Government of Canada translator to ensure accuracy of language and terminology used. Theoretically, if others within the same sampling frame were chosen as participants, we could assume that the results could be replicable.

Qualitative phase. Terminology used in qualitative research in relation to the goals of validity and reliability often differ from those of quantitative research. Commonly, terms such as credibility, transferability, dependability, and confirmability are used as criteria to uphold quantitative research rigor (Cohen et al., 2011; Shenton, 2004). In the preparation and conduct

of the second phase of this research, I made the following specific efforts to ensure confidence, both in general terms of validity and reliability, in my findings.

In this research, I endeavored to minimize interviewer effects and researcher bias. Bracketing is a term for intentionally setting aside one's own preconceived notions, which could taint the findings, for the duration of the research (Tufford & Newman, 2012). My efforts to avoid researcher bias were aided by keeping a reflexive journal which helped me to identify and record my own preconceived perspectives prior to the data collection phase and then any emerging perspectives that arose throughout the rest of the research journey. The goal of such a journal was to enhance my ability to maintain a reflexive attitude throughout the steps of the research and then enable me to summarize these reflections as part of the research analysis. Another example of interviewer effect concerns interviewer characteristics such as age, gender and status having a significant effect on participants' responses (Cohen et al., 2011). In this research, my military rank could have had unintentional effects. I minimized this risk by wearing civilian clothing during all interviews, instead of my uniform, and I always informed the participants that I was wearing civilian clothes to emphasize the fact that I was acting only in a researcher capacity during the interview and not in my military position.

Another effort that I made to help ensure research rigor was to have the interview participants verify the transcripts of the interviews. It could have been possible that the clarity of audio recording could have led to an incorrect transcription and that this could have led to erroneous researcher interpretations. It was vital that the transcription captured what the participant said and so the verification with the participant was a valuable assurance check.

Along with the reflexive journal, I also ensured that an audit trail was kept. This included all research notes, raw data and records of analysis including codification. This lends confidence

to my interpretation of the data and it enabled peer scrutiny (Cohen et al., 2011). I discussed my data and subsequent coding with two DND colleagues, one researcher and one research and development coordinator who had completed her own doctoral research, and I requested their feedback regarding the specific categories and themes derived from the data and my overall research analysis approach. Challenges to my assumptions, including my choices of codes and interpretations of findings, were welcomed with the intent of increasing confidence in my research. I also shared a portion of my coding work (approximately 10%) with my supervisor to further increase confidence. She informed me that she found the assignment of codes to be logically consistent and that she supported the work she reviewed.

As stated in Cohen et al., coding is "not a 'one-off' exercise" (2011, p. 560). To avoid coding drift, which can be defined as "drifting into an idiosyncratic sense of what the codes mean" (Schilling, 2006, p. 33), and so, therefore, not using code assignments the same throughout, coding the data must be an iterative process. As new codes emerged during the open coding process, I went back and forth within the data to ensure consistency in the assignment of codes. To help ensure rigour, in that the coding assignments were consistent throughout, and to prevent coding drift, I completed iterative reliability checks throughout my analyses. As well, I reviewed the entirety of the data at completion to ensure that the codes that emerged during the open coding were appropriately used, where applicable, in the earlier coded texts.

Limitations

Limitations within a research study are features of the design or methodology of the research that could potentially affect the interpretation of the findings. At the outset of the research, it was determined that the research findings could potentially be limited by the number of CAF members who would be recruited and who would respond to the two phases of research.

The intent was, through convenience sampling within the identified sampling frame, to acquire a randomised sample that would be large enough to be representative to the sampling frame to a margin of error (MOE) of 5% and provide a confidence level of 95% for the questionnaire phase of the research, and at least 10 CAF members for the interview phase. The intent was to acquire this sample through a request for participation sent to 1310 CAF Regular Force members who had completed specific DL programs/courses with a note at the end of the questionnaire asking for volunteers for the interviews. The sample of 368 participants for the questionnaire achieved the 5% MOE and 95% confidence level of the sampling frame population of 9233 and 12 interviews were completed and participants were purposely chosen to include graduates from all seven courses/programs. A lower than expected response rate (13.7%; n = 24) from those who had completed the Primary Leadership Qualification (PLQ), however, is considered a limitation in this study due to the lower level of input from the Junior NCM ranks. This may limit somewhat the generalizability and transferability of this research.

A second limitation concerned the use of video or teleconferencing for interviewing. Body language is a rather significant part of the input a researcher can draw upon during an interview session. In Phase 2 of this study, four of the twelve interviewees were geographically dispersed across the country and so video and teleconferencing had to be used. Although there was a decrease of visible body language perceivable to the researcher via video and teleconferencing in comparison with an in-person interview, it was necessary to interview some participants at a distance to attain maximum variation and ensure that participants from all courses/programs in the sampling frame were included. Key body indicators related to mood or positive or negative responses may have been missed that would have been obvious to a researcher in a face-to-face interview.

A third limitation in this research is that the data were provided solely through self-reporting of the participants' subjective evaluations of their levels of satisfaction and their CAF DL experiences. Current mood and general feelings towards the CAF are examples of factors that could have potentially biased the participants' self-report responses.

Ethical Considerations

Two further approvals were required and attained following the acceptance of the proposal for this research. These approvals attained included one internal to the CAF and another through the Athabasca University Research Ethics Board. The CAF research ethics board, known as the Social Science Research Review Board (SSRRB), is held at the Director General Military Personnel Research and Analysis (DGMPRA). DGMPRA is responsible to conduct the SSRRB for all internally generated social science research and all unsolicited external social science research related to CAF members. The SSRRB ensures that research projects conform to all applicable policies, instructions, and guidelines. The SSRRB sits weekly and its approval had to be obtained prior to the commencement of my research (National Defence and the Canadian Armed Forces, 2015). An approval in principle was granted to this research in November 2017 with full approval dependent on several small changes. With the completion of the required changes and the approval of my proposal by the university, full approval was granted from the SSRRB on 8 February 2018. The Athabasca University Research Ethics Board (REB) approval was also attained prior to data collection. The certification for this approval, dated 8 March 2018, is at Appendix G.

Three main ethical considerations were taken into consideration in the planning and conduct of this research study: (a) anonymity/confidentiality; (b) informed consent; and (c) the avoidance of direct or indirect coercion to participate.

Anonymity and confidentiality are important ethical considerations that were made when planning for this research project. In the quantitative portion of this study, the questionnaires were submitted anonymously to the CAF internal survey generating and result gathering software named Snap Survey Pro. No names or email addresses were transmitted with the submission of the questionnaires. One exception exists, however, in that respondents who wished to volunteer for an interview, following their questionnaire completion, forwarded their name and contact info to me via internal email so that they could be contacted. Their name and corresponding interview data were kept confidential as only I had this information. Names and contact information were destroyed after the research was completed. Qualitative findings, through the interview method, explored the participants' feelings in their own words concerning their satisfaction and other potentially influencing factors, such as the support they received from the Chain of Command. If confidentiality was not to be respected and negative feedback towards the participants' Chain of Command was shared, for example, it could potentially have negative repercussions on the individuals' career prospects. The individual could potentially pay too high of a price for the benefits to the organization's population in this research. Confidentiality was valued in this research project and the participants were encouraged to feel secure in this regard so that they could feel free to be completely open, truthful, and unfettered in their responses. All research data will be deleted from the computer(s) on which it was stored, and all paper files related to the data will be shredded after a period of five years.

Informed consent is the second ethical consideration that was considered in this study. In both the qualitative and quantitative phases of this mixed methods study, participants were informed about what they were being asked to do, why they were being asked to do it, and how the findings would be used. They were informed that they could withdraw their participation

without penalty. Specifically, questionnaire participants during Phase 1 could terminate the questionnaire at any point while they were completing the online form. This was made clear in the questionnaire preamble where participants were told that they could withdraw their consent at any time by advancing to the last page of the questionnaire and indicating that they no longer wished to participate and have their responses used. As the CAF/DND prioritizes anonymity in their questionnaire collection procedures, the identities were not collected with the submitted questionnaires and so, therefore, once the participant submitted their questionnaire online to the official repository, they were no longer able to withdraw. For Phase 2, as the identity of the interview participants were known, interview participants could have withdrawn their participation at any point during the data collection or analysis phase.

As this project was conducted in two phases, with months between the two phases, informed consent was sought at the start of each phase. For the online questionnaire, the first question confirmed informed consent and the participant's agreement to participate. For the interviews, participants were asked to sign a consent form in person or sign and scan the form back to me if not physically co-located. In one instance, the participant gave their consent orally during a teleconference and I signed the form with a statutory declaration that the participant had declared that they had read, understood, and agreed to the form. All informed consent forms have been kept on file.

The third ethical consideration was to avoid the potential for direct or indirect coercion. As the invitation to participate came via DND/CAF internal email, with a link to an online questionnaire, and due to the fact that the questionnaire preamble indicated that it was a study that was sponsored by Military Personnel Generation (MPG), the military participants that were contacted may have felt that they were obliged to participate. In the event that the direct

supervisors of potential participants supported this study, they may have encouraged the potential participants to take part and this encouragement could have been interpreted as coercion or as direction by the potential participant. Since rank is important in the military, members are used to following commands of superiors. My rank could have potentially caused some indirect perceived issues of coercion with lower ranked members. It was, therefore, made clear upfront to all potential participants that research participation was completely optional and voluntary and that I was acting in the capacity of a researcher, outside of the Chain of Command, and not as a superior regardless of the rank of the participant. It was made clear that only those members who wished to participate should participate. As an added measure, I dressed in civilian clothing during interviews, instead of a uniform, to further assure members that I was acting in the capacity of a researcher and not as a military senior officer during the interviews.

Chapter Summary

In this third chapter, the methodology used for this research was described. The research questions and their expected outcomes were restated. The two phases of the research, quantitative and qualitative, were outlined and a justification for the mixed methods choice of approach was given. The particulars of the research design and the procedure of administering the questionnaire phase and the interview phase were detailed. The sample of CAF members was discussed, as well as the method for data collection. The Phase 1 and 2 plans for the analyses of the data were described, as well as the conduct of a pilot study to determine if there were any revisions required to either the questionnaire or to the interview guide. Some issues of practicality and feasibility were discussed, including the internal organizational approvals that were required and received.

My roles, as the researcher and as a member of the CAF, were discussed along with ways in which I strived to maximize research rigor. Several limitations, such as the low response rates for graduates of the Primary Leadership Qualification course and the limited ability to interpret body language via video and teleconference for members geographically dispersed across the country, were also discussed. Ethical considerations were presented and discussed, namely: (a) anonymity and confidentiality; (b) informed consent; and (c) the avoidance of direct or indirect coercion to participate. Two ethics review board approvals, within the CAF and at Athabasca University, were attained.

Chapter 4. Quantitative Analysis: Results

Overview

The quantitative data in this research was acquired through an invitation to an online questionnaire that was sent via DND/CAF internal email to 1310 members who had completed one of seven CAF professional development courses or programs within the period of 1 January 2015 to 26 March 2018. This chapter includes a section outlining the response rates to the questionnaire, a descriptive profile of the sample, and then the quantitative findings for overall satisfaction, satisfaction in relation to demographic variables, course quality factors, support, and perceptions towards DL. Results will include frequencies and percentage distributions, crosstabulations, correlation analyses, exploratory factor analyses, and multiple regression analyses.

Response Rates

Of the 1310 members who were sent the invitation by email to participate in this research, 405 responded. It was determined that only questionnaires that were at least half completed (i.e., at least 30 of the 59 questions answered) would be kept in the dataset. After the data cleaning was completed, 369 questionnaires were retained. One additional questionnaire was deleted because the respondent chose “not applicable” for most questions and commented that he had not completed any DL program since 1 Jan 2015. It was assumed that an error had taken place in the inclusion of this member in the sampling frame or perhaps in the composition of the email address. In total, 368 questionnaires were retained for analysis.

Overall, the 368 questionnaires retained after the data cleaning provided a response rate of 28.1%. With the sampling frame population of 9233, this provided a sufficient sample for a 5% margin of error (MOE) and a 95% confidence level for questions that were answered by all

participants. Some specific questions, however, were answered by less participants and would result in a larger MOE.

The table below outlines the total population within the chosen sampling frame for this research broken down by individual courses and programs, the number of invitations that were sent, and the number and percentages of responses that were retained after the data cleaning.

Table 1

Population within Sampling Frame, Sample and Response Rates

Course/Program	N Within Sampling Frame	Invitations Sent	Retained Responses	Total Response Rate
CAFJOD	1343	303	91	30.0%
PLQ	4506	328	24	13.7%
ILP	1820	192	57	29.7%
ALP	1010	163	50	30.7%
SLP	333	134	51	38.1%
SAP	72	69	42	60.9%
JCSP	149	121	53	43.8%
Totals	9233	1310	368	28.1%

Generally speaking, the response rates were higher amongst the courses completed by the more senior officers (i.e., JCSP = 43.8%) and NCMs (i.e. SLP = 38.1% and SAP = 60.9%). The lowest response rate was amongst the more junior NCMs, as is demonstrated by the 13.7% response rate for those who had completed the Primary Leadership Qualification (PLQ). The low response rate amongst junior NCMs may be due to them having had less access to workstations/computers due to being on training or on field exercises.

Descriptive Profile

Gender. The questionnaire participants were asked to identify their gender and were given the choice of male, female, or another gender identity. Of the 368 questionnaires retained, 19 respondents chose not to answer the question identifying gender. Of the remaining 349

respondents, 296 respondents (84.8%) identified their gender as male and 53 respondents (15.2%) identified their gender as female. No respondent chose "another gender identity." These findings are closely aligned with the gender distribution in the CAF overall, as according to *Strong, Secure, Engaged: Canada's Defence Policy*, at the time the policy was written, 15% of CAF members were female (2017, p.23).

Rank group. The questionnaire participants were asked to identify their rank group with the following choices available: 1) Junior NCM; 2) Senior NCM; 3) Junior Officer; and 4) Senior Officer. Of the 368 questionnaires retained, 19 respondents chose not to answer the question identifying rank group. Of the 349 respondents remaining, 19 respondents (5.4%) identified their rank group as Junior NCM, 185 (53.0%) identified their rank group as Senior NCM, 82 respondents (23.5%) identified their rank group as Junior Officer, and 63 respondents (18.1%) identified their rank group as Senior Officer.

The only program that a Junior NCM would have access to within the programs included as prerequisite to be included in the sampling frame is the PLQ. The small representation of Junior NCMs is due partially to the relatively low response rate of 13.7% for graduates of this course who received the invitation to participate in the questionnaire, and partially as members at the rank of Private, one of the three ranks of a Junior NCM, would not attend any of the courses identified in the sampling frame.

Previous DL experience. The questionnaire participants were asked to identify the extent of their previous experience with DL. Three possible responses were offered: 1) rather inexperienced (only took one course); 2) somewhat experienced (took several courses); and 3) very experienced (took many courses, perhaps completed a diploma or degree online). Of the 368 questionnaires retained, 19 respondents chose not to answer the question regarding the

extent of their previous DL experience. Of the 349 questionnaires retained, 8 respondents (2.3%) said that they were rather inexperienced, 237 (67.9%) said that they were somewhat experienced, and 104 (29.8%) said that they were very experienced.

First official language. The questionnaire participants were asked to identify their first official language (FOL). Of the 368 questionnaires retained, 19 respondents chose not to answer the question regarding FOL. Of the 349 respondents, 264 (75.6%) stated that English was their FOL and 85 (24.4%) stated that French was their FOL. Interestingly, the percentage of respondents who chose to complete the questionnaire in French was much lower than those who declared French as their FOL. Of the 368 participants who started the questionnaire, 328 (89.1%) chose to initiate the English version of the questionnaire and only 40 (10.9%) initiated the French version of the questionnaire.

Age. The questionnaire participants ranged in age from 23 to 58 years. Of the 368 questionnaires retained, 21 respondents chose not to answer the question regarding age. Of the 347 respondents, the average age was 43.79 years (*SD* = 7.82).

Years of service in CAF. The questionnaire participants ranged in years of service from 3 to 37 years. Of the 368 questionnaires retained, 20 respondents chose not to answer the question regarding years of service. Of the 348 respondents, the average number of years of service was 22.59 years (*SD* = 8.82).

Latest professional development course member completed. The questionnaire participants were drawn from a sampling frame of members who had completed one of seven different professional development courses or programs in the past three years. Of the 368 questionnaires retained, 24 (6.5%) were of members who had completed the PLQ, 57 (15.5%) were of members who had completed the ILP, 50 (13.6%) were of members who had completed

the ALP, 51 (13.9%) were of members who had completed the SLP, 42 (11.4%) were of members who had completed the SAP, 91 (24.7%) were of members who had completed the CAFJOD, and 53 (14.4%) were of members who had completed the JCSP DL.

CAF Member Overall Satisfaction with DL Experiences and Preferences

Percentage distributions of overall satisfaction. The first survey question, shown in Appendix A, asked participants to rate how satisfied they were with their overall CAF DL experiences based on a 5-point Likert Scale, where one (1) was *very dissatisfied* and five (5) was *very satisfied*. An option of six (6) was given for not applicable. The distribution of responses is displayed in Figure 1 below.

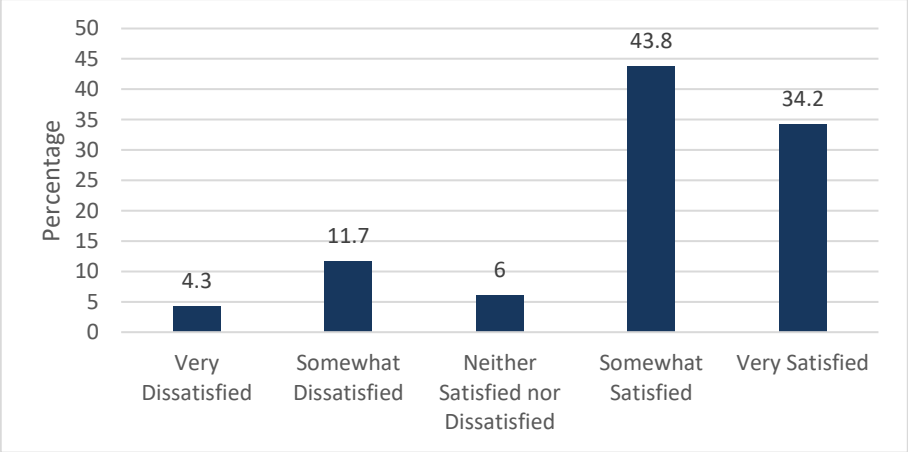

Figure 1. Respondents' overall satisfaction with DL in the CAF.

A combined 78.0% reported that they were satisfied with their DL experiences overall in the CAF (34.2% very satisfied); whereas, 16.0% reported that they were dissatisfied with their DL experiences overall in the CAF (4.3% very dissatisfied) (n=368).

Percentage distributions of preference between DL and classroom. Question 12 in Appendix A asked participants if they were to enrol themselves in a professional development course and had to choose between DL and a classroom course, with all other factors being equal (e.g. time provided, effort required), which they would choose.

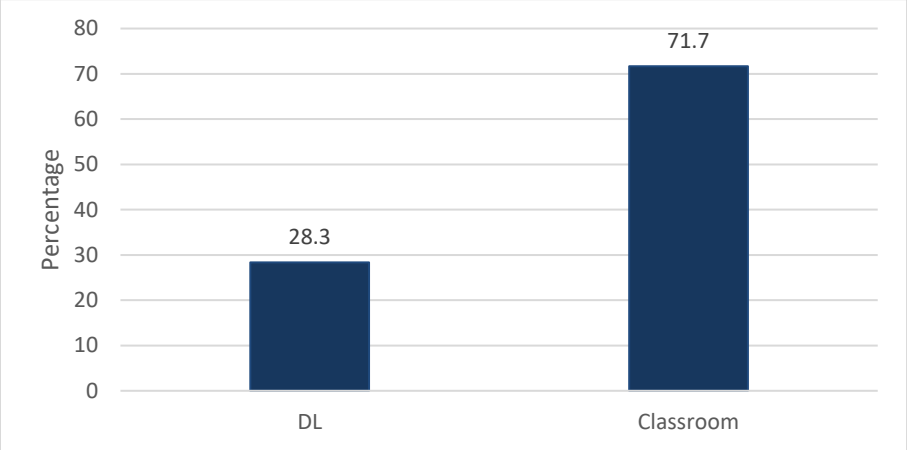

Figure 2. Respondents' choice between DL or classroom, assuming all else equivalent.

The distribution of responses is shown in Figure 2. 71.7% would choose a classroom setting over DL and 28.3% would choose DL over a traditional classroom course, with all other things being equal (n=346).

CAF satisfaction with DL and preferences summary. Regarding CAF members' general satisfaction with their DL experiences, it is interesting to note that while the satisfaction levels overall were quite high, in that 78.0% reported that they were satisfied with their CAF DL experiences, 71.7% of the participants responded that, given the choice and with all other factors being equal, they would still choose a classroom course over a course being delivered by DL.

Demographics

Percentage distributions by demographic variables. The following figures show CAF members' DL satisfaction in relation to seven demographic variables. Further information about percentages, frequencies and sample sizes can be found in Appendix H and I. Bar graphs are displayed below to give a high-level representation of the results.

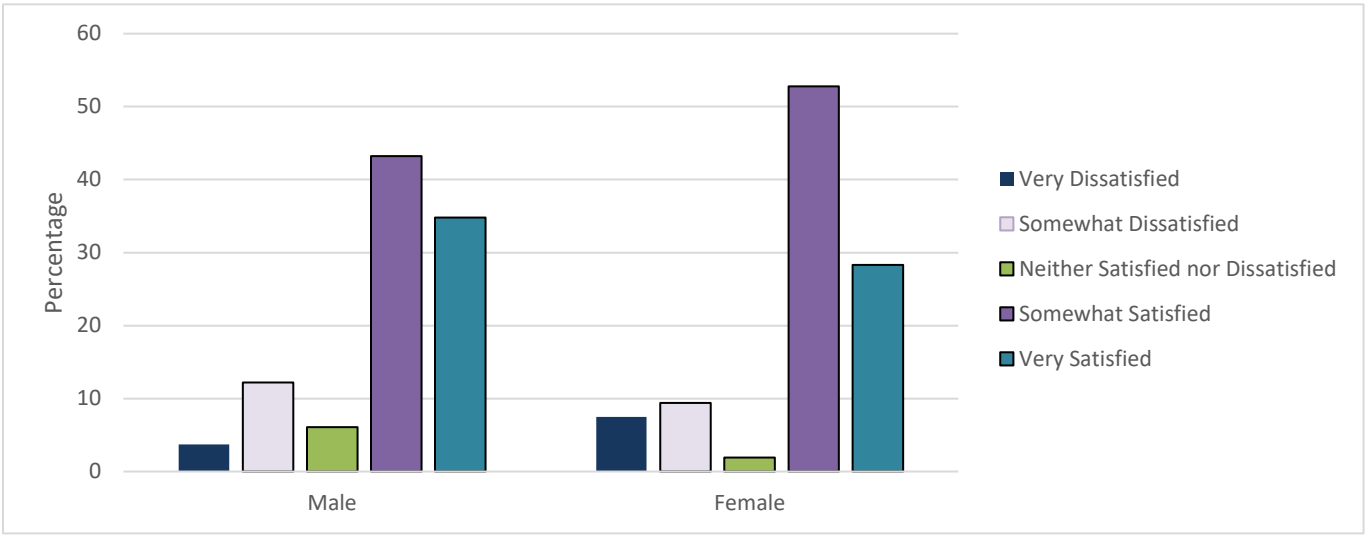

Figure 3. DL satisfaction level by gender.

As shown in Figure 3, both genders (male and female) were rather similar in their responses regarding overall DL satisfaction. Females showed a slightly higher level of overall satisfaction (combining somewhat satisfied and very satisfied) at 81.1%, in comparison with males at 78%. It may be noteworthy, however, that male participants had a higher level of very satisfied (34.8%) than females (28.3%).

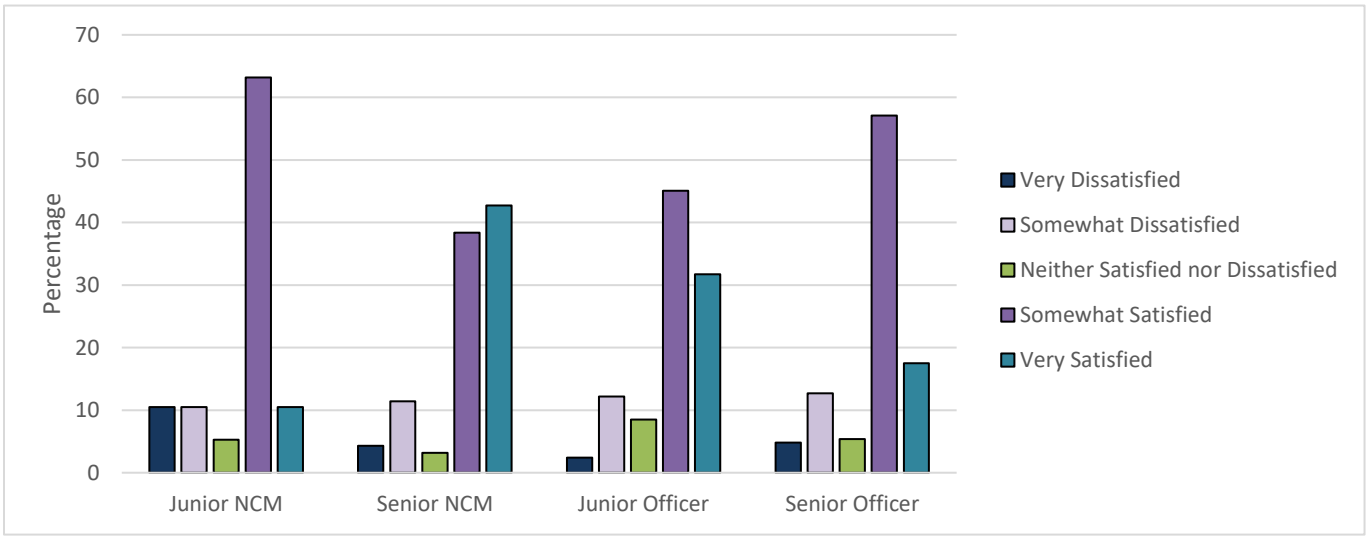

Figure 4. DL satisfaction level by rank group.

As shown in Figure 4 for rank groups, there was some variation in responses regarding overall DL satisfaction. For example, amongst the rank groups, Senior NCMs showed a slightly higher level of overall satisfaction (combining somewhat satisfied and very satisfied) at 81.1%, followed by Junior Officer respondents at 76.8%, Senior Officer respondents at 74.6%, and Junior NCM respondents at 73.7% satisfied overall.

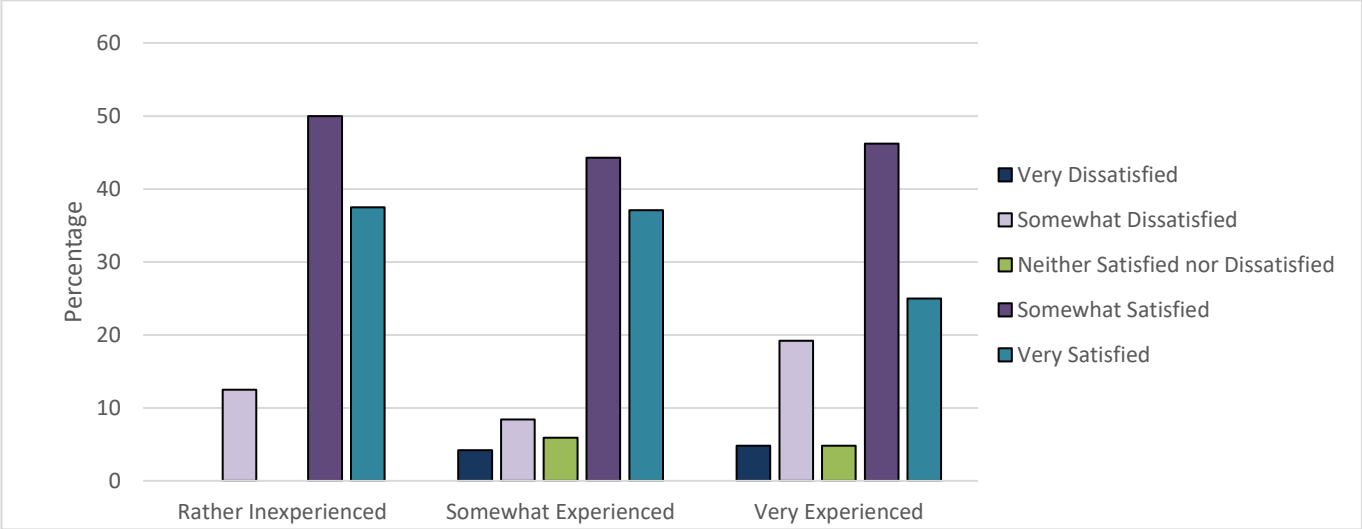

Figure 5. DL satisfaction level by previous experience with DL.

As shown in Figure 5 for previous experience with DL, the group who rated themselves as being rather inexperienced with DL showed the higher level of combined (somewhat satisfied and very satisfied) level of overall DL satisfaction at 87.5%. This group was followed by the somewhat experienced with DL group at 81.4% satisfied and the very experienced with DL group in which 71.2% indicated that they were satisfied overall with their DL experiences in the CAF. It must be noted that, as was stated in the descriptive profile of the sample, there were only eight respondents who rated themselves as rather inexperienced with DL.

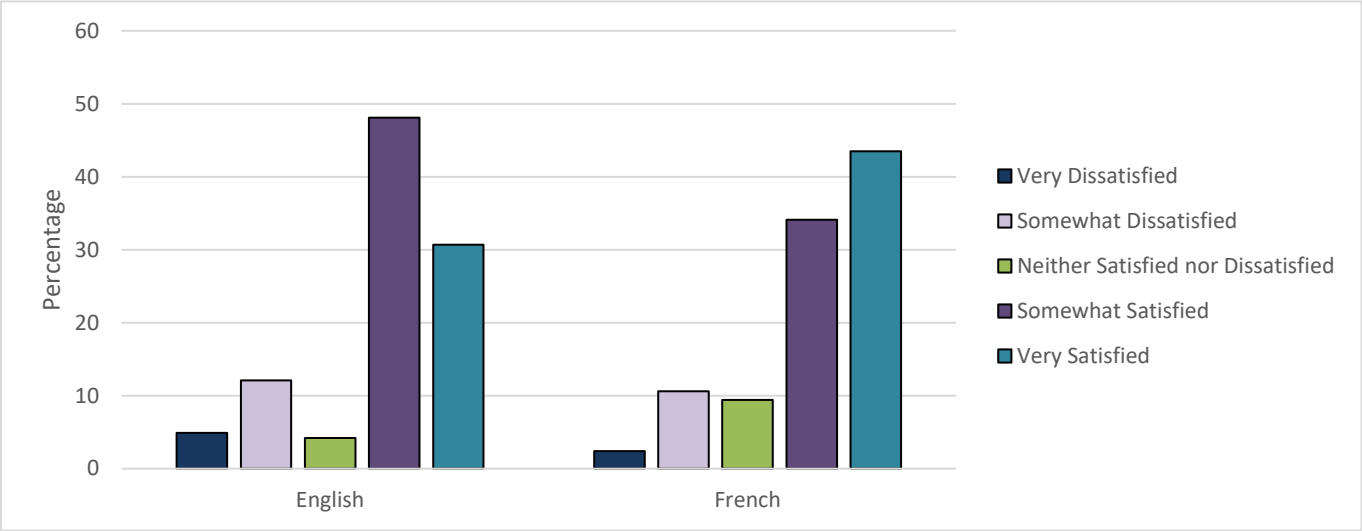

Figure 6. DL satisfaction level by first official language.

As shown in Figure 6, those who responded that their first official language was English or French, as well, showed quite similar responses regarding overall DL satisfaction. Anglophones showed a slightly higher level of overall DL satisfaction (combining somewhat satisfied and very satisfied) at 78.8%, in comparison with Francophones at 77.6%, but there was a higher level of Francophones who reported that they were very satisfied (43.5% for Francophones versus 30.7% of Anglophones).

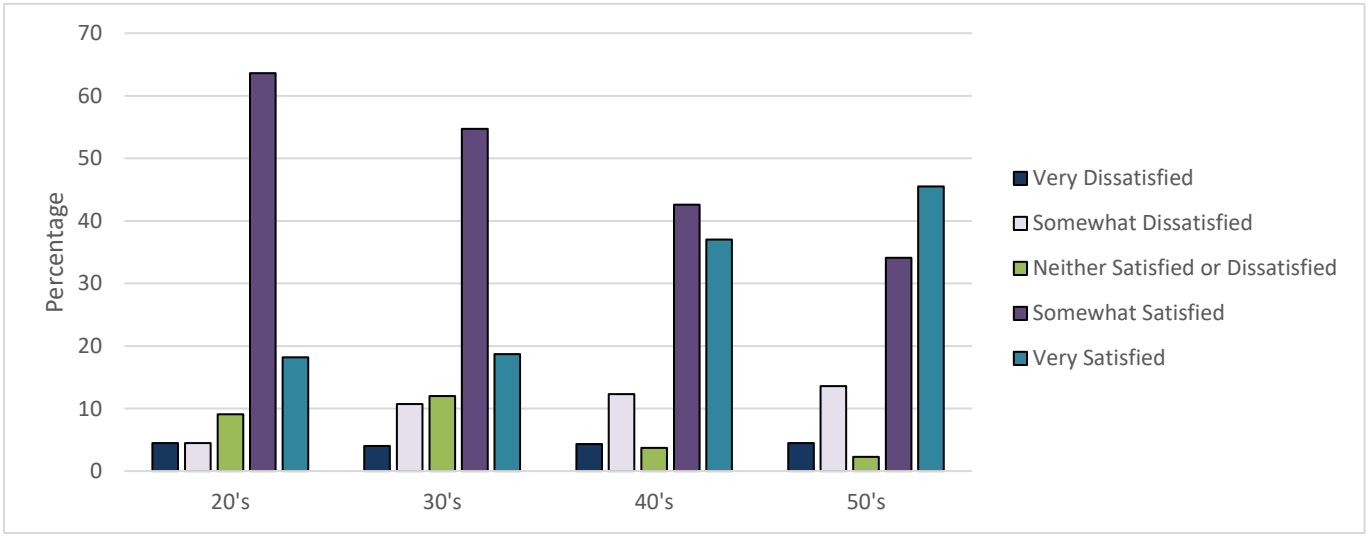

Figure 7. DL satisfaction level by age.

As shown in Figure 7 for age, the 20's age group showed the higher level of overall satisfaction (combining somewhat satisfied and very satisfied) at 81.8%, although this group was relatively small (n=22). It may be noteworthy, however, that within this group, there was a small percentage who stated that they were very satisfied (18.4%) and a larger percentage that said that they were somewhat satisfied (63.6%). This group was followed by identical results for the 40's and 50's at 79.6% satisfied overall, but with a much larger percentage of members who indicated that they were very satisfied. The lowest level of satisfaction overall was with the group in their 30's with 73.4% indicating that they were satisfied overall with their DL experiences in the CAF.

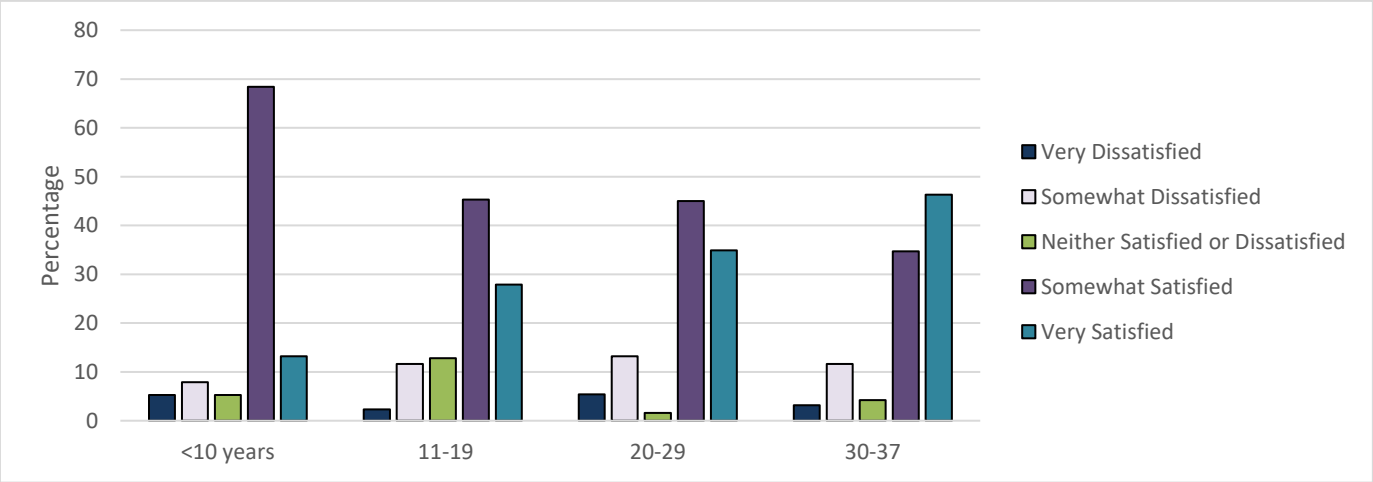

Figure 8. DL satisfaction level by years of service.

As shown in Figure 8 for years of military service, the participants who had less than 10 years of service showed the higher level of combined (somewhat satisfied and very satisfied) level of satisfaction. For this group, 81.6% indicated that they were satisfied overall with their DL experiences in the CAF. It may be noteworthy, however, that within this group, there was a small percentage who stated that they were very satisfied (13.2%) and a larger percentage that said that they were somewhat satisfied (68.4%). This group was followed by those with 30 to 37 years of service with 81.0% satisfied overall, then by the group with 20 to 29 years of service at 79.9%. Similar to the findings in the previous figure regarding age, the two groups with the most

years of service showed the largest percentage of members who indicated that they were very satisfied. The group with 10 to 19 years of service showed the lowest level of satisfaction with their DL experiences in the CAF overall with 73.2%.

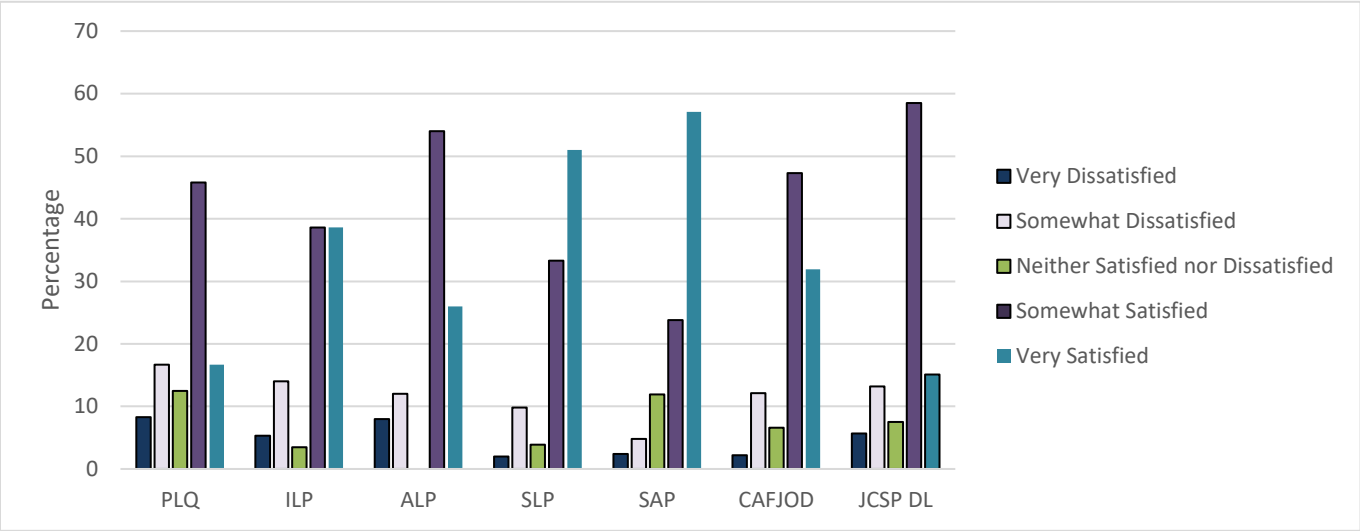

Figure 9. DL satisfaction level by latest PD course completed.

As shown in Figure 9 for latest PD course completed, students who had completed the SLP most recently rated the highest level of combined (somewhat satisfied and very satisfied) overall DL satisfaction at 83.4%. On the other hand, students who had completed the PLQ the most recently rated the lowest level of satisfaction with DL in the CAF overall at 62.5%.

Percentage distribution by demographics: considerations. Some considerations should be taken when interpreting these results. It must be stated, for example, that in the CAF, there are generally relationships between a members age or years of service, and which course a member would most likely have completed most recently. A 20-year-old soldier, for example, would not have the years of experience to be eligible for the Senior Appointment Program (SAP). Overall DL satisfaction could have been influenced by various factors outside of the demographic variables, such as the time allotted by the Chain of Command during their most

recent course and not simply, for example, the quality of the particular course/program they had completed.

In reference to the previous PD courses that the members took, it should be noted that data was collected in 2018 and the survey questioned respondents about the programs that they had completed in the previous three years. Various, and in some cases significant, changes have been made to the individual courses and programs since the time that the participants would have completed their DL experiences and may not reflect present students' satisfaction ratings.

Crosstabulations. As gender, rank group, first official language and most recent DL PD course completed are nominal data, no correlations have been completed for these in relation to overall DL satisfaction. Crosstabulations were completed for further analyses and are presented below in Tables 2 to 5. Previous DL experience, age and years of service, which are all considered here as ordinal data, will be further analyzed in the next section using Spearman's Rho.

Gender. The table below illustrates how gender interacted with overall satisfaction of DL in the CAF (n=349).

Table 2

*Gender * Overall Satisfaction Crosstabulation*

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Male	Count	11	36	18	128	103	296
	% within gender	(3.7%)	(12.2%)	(6.1%)	(43.2%)	(34.8%)	(100%)
Female	Count	4	5	1	28	15	53
	% within gender	(7.5%)	(9.4%)	(1.9%)	(52.8%)	(28.3%)	(100%)
Total	Count	15	41	19	156	118	349
	% within gender	(4.3%)	(11.7%)	(5.4%)	(44.7%)	(33.8%)	(100%)

While similar, females showed a slightly higher level of combined (somewhat satisfied and very satisfied) level of satisfaction. 78% of male respondents indicated that they were satisfied overall with their DL experiences in the CAF, while 81.1% of females indicated that they were satisfied overall with the DL experience in the CAF.

Rank group. The table below illustrates how rank groups interacted with overall satisfaction of DL in the CAF (n=349).

Table 3

*Rank Group * Overall Satisfaction Crosstabulation*

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Junior NCM	Count % within rank group	2 (10.5%)	2 (10.5%)	1 (5.3%)	12 (63.2%)	2 (10.5%)	19 (100%)
Senior NCM	Count % within rank group	8 (4.3%)	21 (11.4%)	6 (3.2%)	71 (38.4%)	79 (42.7%)	185 (100%)
Junior Officer	Count % within rank group	2 (2.4%)	10 (12.2%)	7 (8.5%)	37 (45.1%)	26 (31.7%)	82 (100%)
Senior Officer	Count % within rank group	3 (4.8%)	8 (12.7%)	5 (7.9%)	36 (57.1%)	11 (17.5%)	63 (100%)
Total	Count % within rank group	15 (4.3%)	41 (11.7%)	19 (5.4%)	156 (44.7%)	118 (33.8%)	349 (100%)

While similar amongst all rank groups, Senior NCMs showed a slightly higher level of combined (somewhat satisfied and very satisfied) level of satisfaction. 81.1% of Senior NCM respondents indicated that they were satisfied overall with their DL experiences in the CAF, followed by Junior Officer respondents at 76.8%, Senior Officer respondents at 74.6%, and Junior NCM respondents at 73.7% satisfied overall.

First official language. The table below illustrates how participants' first official language (i.e. English or French) interacted with overall satisfaction of DL in the CAF (n=349).

Table 4

*First Official Language * Overall Satisfaction Crosstabulation*

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
English	Count % within FOL	13 (4.9%)	32 (12.1%)	11 (4.2%)	127 (48.1%)	81 (30.7%)	264 (100%)
French	Count % within FOL	2 (2.4%)	9 (10.6%)	8 (9.4%)	29 (34.1%)	37 (43.5%)	85 (100%)
Total	Count % within FOL	15 (4.3%)	41 (11.7%)	19 (5.4%)	156 (44.7%)	118 (33.8%)	349 (100%)

While very similar amongst the two groups, the group of participants who indicated their first official language was English showed the higher level of combined (somewhat satisfied and very satisfied) level of satisfaction. For this group, 78.8% indicated that they were satisfied overall with their DL experiences in the CAF. For the group of participants who indicated their first official language was French, 77.6% indicated that they were satisfied overall with their DL experiences in the CAF.

Latest professional development course/program completed. The table below illustrates how the participants' latest professional development course completed, within the courses/programs completed amongst the sampling frame, interacted with overall satisfaction of DL in the CAF (n=368). It must be noted that the level of satisfaction does not necessarily relate to the latest course that was taken as the satisfaction variable referred to overall satisfaction with DL in the CAF. The latest course completed, however, may have influenced the overall satisfaction rating.

Table 5

*Latest Professional Development Course/Program Completed * Overall Satisfaction Crosstabulation*

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
CAFJOD	Count	2	11	6	43	29	91
	% of latest PD	(2.2%)	(12.1%)	(6.6%)	(47.3%)	(31.9%)	(100%)
PLQ	Count	2	4	3	11	4	24
	% of latest PD	(8.3%)	(16.7%)	(12.5%)	(45.8%)	(16.7%)	(100%)
ILP	Count	3	8	2	22	22	57
	% of latest PD	(5.3%)	(14.0%)	(3.5%)	(38.6%)	(38.6%)	(100%)
ALP	Count	4	6	0	27	13	50
	% of latest PD	(8.0%)	(12.0%)	(0.0%)	(54.0%)	(26.0%)	(100%)
SLP	Count	1	5	2	17	26	51
	% of latest PD	(2.0%)	(9.8%)	(3.9%)	(33.3%)	(51.0%)	(100%)
SAP	Count	1	2	5	10	24	42
	% of latest PD	(2.4%)	(4.8%)	(11.9%)	(23.8%)	(57.1%)	(100%)
JCSP	Count	3	7	4	31	8	53
	% of latest PD	(5.3%)	(13.2%)	(7.5%)	(58.5%)	(15.1%)	(100%)
Total	Count	16	43	22	161	126	368
	% of latest PD	(4.3%)	(11.7%)	(6.0%)	(43.8%)	(34.2%)	(100%)

The ranked list below shows the combined (somewhat satisfied and very satisfied) levels of satisfaction, in descending order, with the related combined percentage. Of note, students who had completed the SLP the most recently rated the highest level of satisfaction with DL in the CAF overall. On the other hand, students who had completed the PLQ the most recently rated the lowest level of satisfaction with DL in the CAF overall.

Table 6

Rank of Overall DL Satisfaction by Most Recent PD Course/Program Completed

Rank	Professional Development Course/Program	Percentage
1	SLP	84.3%
2	SAP	80.9%
3	ALP	80.0%
4	CAFJOD	79.2%
5	ILP	77.2%
6	JCSP DL	73.6%
7	PLQ	62.5%

Crosstabulations for the other demographic variables, including previous DL experience, age and years of service can be found at Appendix I. The correlation analysis for these ordinal variables is presented in the next section.

Correlations. Table 7 presents the results of the correlation analysis that tested three demographical variables, that can be considered ordinal data, in relation to the variable of overall DL satisfaction in the CAF. These variables included previous DL experience, age and years of service.

Table 7

Correlations of Demographic Variables with Overall DL Satisfaction

Variables	n	Overall DL Satisfaction
Previous DL Experience	349	-.142**
Age	347	.194**
Years of Service	348	.190**

** $p < .01$ (two-tailed)

Results of the Spearman correlation indicated that all three of the ordinal demographic variables had significant with the overall DL satisfaction variable. Age (r_s (347) = .194, $p < .01$) and years of service (r_s (348) = .190, $p < .01$) both had significant positive associations. The strength of these correlations, however, are considered very weak. Previous DL experience (r_s

(349) = -.142, $p < .01$) had a significant negative association with the overall DL satisfaction variable but this association is also considered very weak.

Demographics summary. The percentage distributions showed that the demographics with the highest percentage to have reported satisfaction with DL, to varying degrees, were as follows: women over men; Senior NCMs over the other rank groups; those who were rather inexperienced with DL over those who had some or much experience with DL; Anglophones over Francophones; those in their 20's over other age groups; those with under 10 years of military service over those with more years of service; and those who had completed the SLP as their last PD course over those who had most recently completed other courses. It must be cautioned that, on closer examination of these results, the differences were very slight. For example, 81.1% females reported overall DL satisfaction versus 78.0% of males reported overall DL satisfaction. The low response rates for Junior NCMs, those who had completed the PLQ and those who rated themselves as rather inexperienced with DL may have affected these distributions.

Crosstabulations for the four nominal variables were presented and Spearman's Rho findings were presented for the three ordinal data variables. Although the three ordinal variables, of age, years of service and previous DL experience, showed significant correlations with overall DL satisfaction, all were found to be very weak in strength. Due to these findings, it was decided that no further analyses, beyond these descriptive tests, would be completed on the demographical variables.

Satisfaction with DL Course Quality Variables

Percentage distributions. In question 2 of Appendix A, participants were asked to rate their level of satisfaction with the 13 following course quality factors: 1) clear learning

objectives; 2) effective communications with instructor; 3) interactions with classmates; 4) feeling of being part of a learning community; 5) collaborative group work with classmates; 6) engaging course content; 7) easily accessible required course materials; 8) clearly described course assessment; 9) constructive feedback from instructors on assignments and assessments; 10) timely feedback from instructors on assignments and assessments; 11) effective course technology (e.g. DLN); 12) course materials provided that helped to reach course objectives; and 13) course technology that helped to reach course objectives. All of these questions were asked based on a 5-point Likert Scale, where one (1) was *very dissatisfied* and five (5) was *very satisfied*. An option of six (6) was given for not applicable.

Individual tables with frequencies and percentages, along with the sample size, are displayed in Appendix H for each of these course quality factor questions. Bar graphs are displayed below to give a high-level representation of the results.

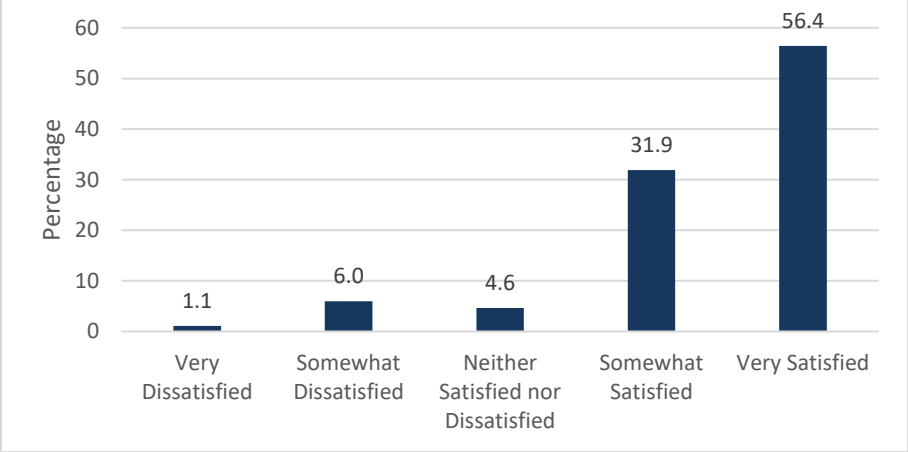

Figure 10. Overall satisfaction with clear learning objectives.

Participants' satisfaction with "clear learning objectives" (question 2a), was 88.3% (56.4% very satisfied), as shown above in Figure 10.

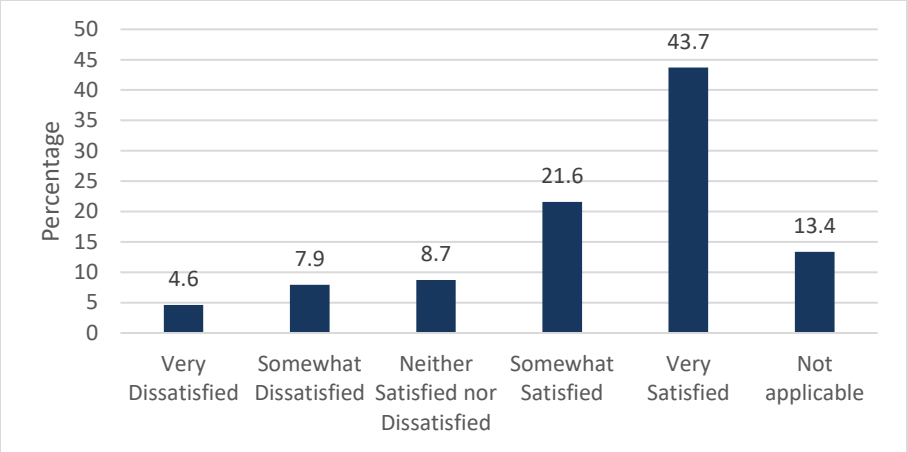

Figure 11. Overall satisfaction with effective communications with instructor.

Participants' satisfaction with "effective communications with instructor" (question 2b), was 65.3% (43.7% very satisfied), as shown above in Figure 11. It should be noted that 13.4% of participants chose "not applicable" and is likely reflective of the fact that the CAFJOD program has no instructor interactions.

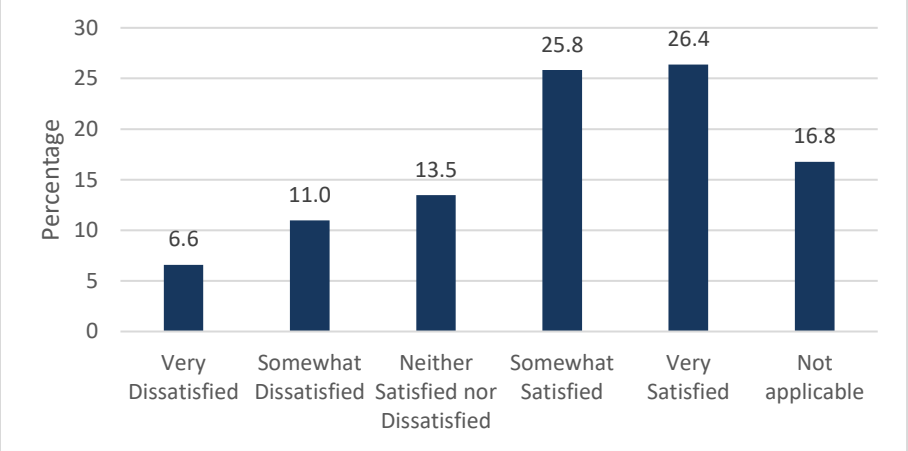

Figure 12. Overall satisfaction with interactions with classmates.

Participants' satisfaction with "interactions with classmates" (question 2c), was 52.2% (26.4% very satisfied), as shown above in Figure 12. It should be noted that 16.8% of participants chose "not applicable" and is likely reflective of the fact that some of the DL courses have no interaction with classmates built in, such as with the CAFJOD program and the DL portion of the PLQ.

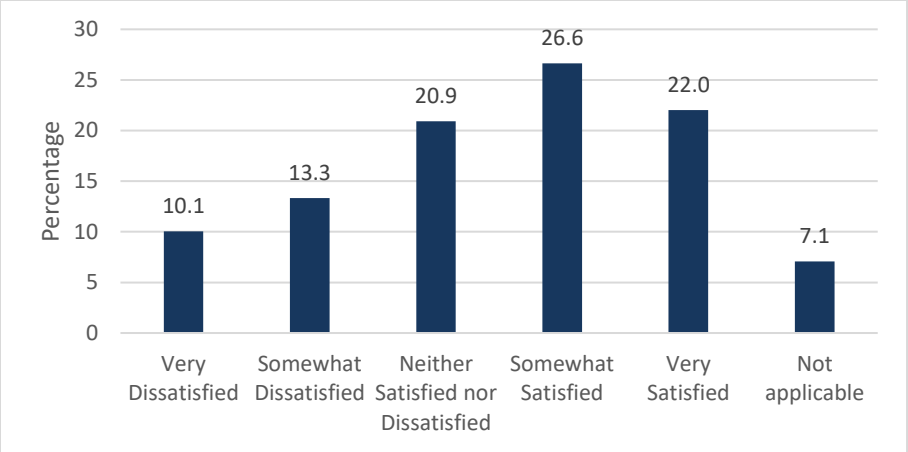

Figure 13. Overall satisfaction with the feeling of being part of a learning community.

Participants' satisfaction with "feeling of being part of a learning community" (question 2d), was 48.6% (22% very satisfied), as shown above in Figure 13. It should be noted that 7.1% of participants chose "not applicable" and is likely reflective of the fact that some of the DL courses have no interaction with classmates built in, such as with the CAFJOD program and the DL portion of the PLQ.

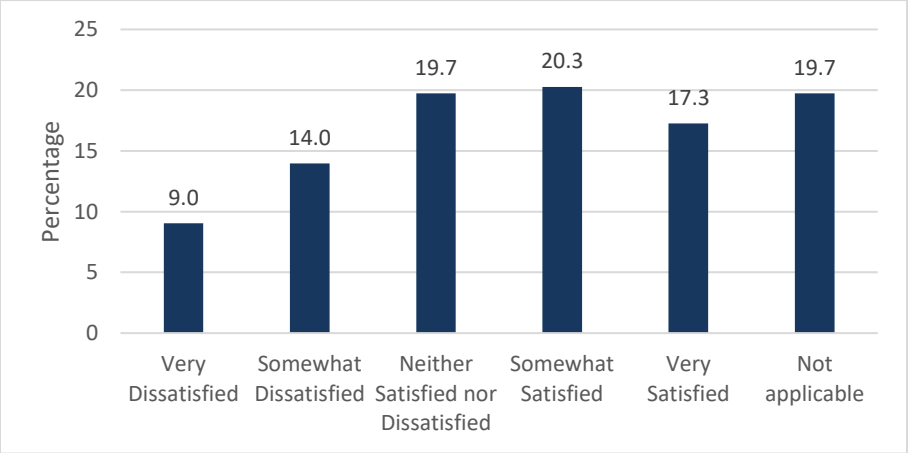

Figure 14. Overall satisfaction with collaborative group work with classmates.

Participants' satisfaction with "collaborative group work with classmates" (question 2e), was 37.6% (17.3% very satisfied), as shown above in Figure 14. It should be noted that 19.7% of participants chose "not applicable" and is likely reflective of the fact that some of the DL

courses have no interaction with classmates built in, such as with the CAFJOD program and the DL portion of the PLQ.

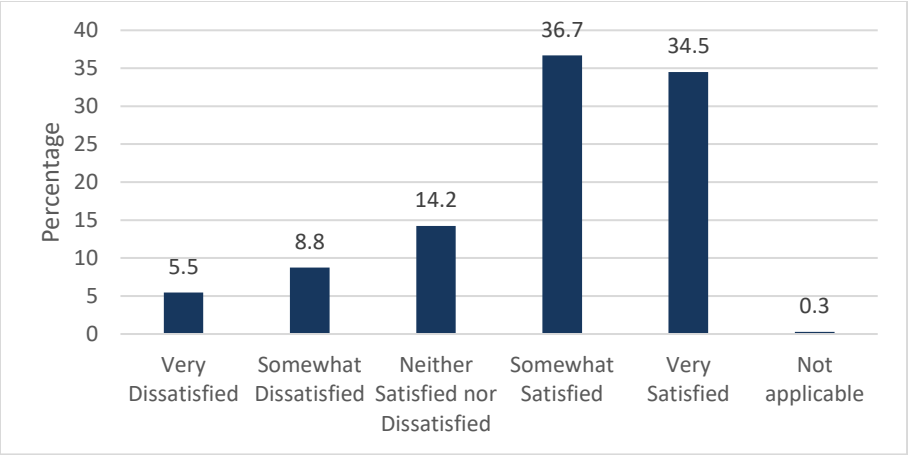

Figure 15. Overall satisfaction with engaging course content.

Participants' satisfaction with "engaging course content" (question 2f), was 71.2% (34.5% very satisfied), as shown above in Figure 15.

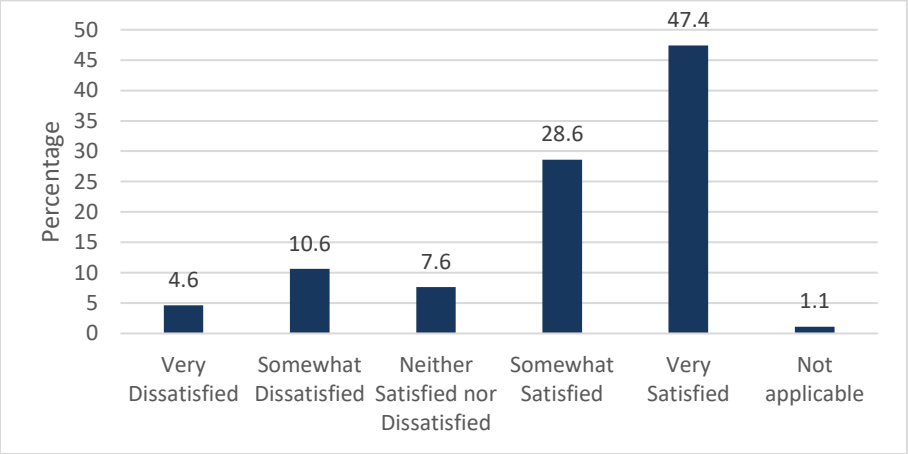

Figure 16. Overall satisfaction with easily accessible required course material.

Participants' satisfaction with "easily accessible required course material" (question 2g), was 76.3% (47.4% very satisfied), as shown above in Figure 16.

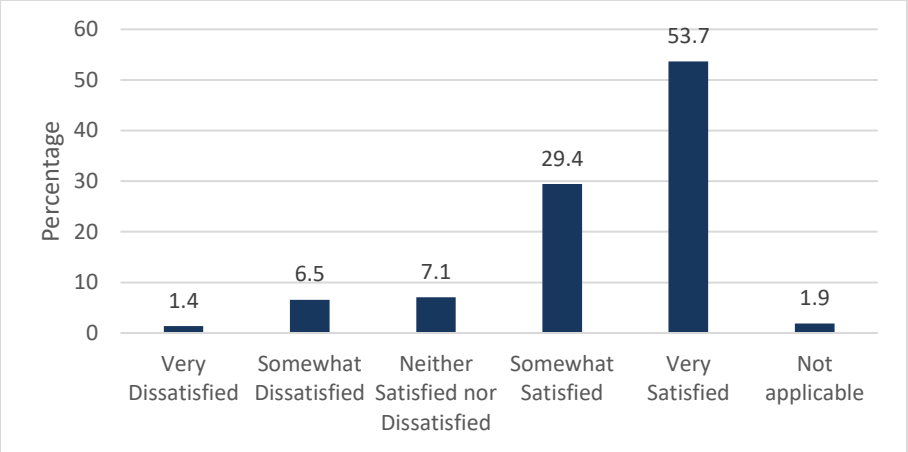

Figure 17. Overall satisfaction with clearly described course assessments.

Participants' satisfaction with "clearly described course assessments" (question 2h), was 83.1% (53.7% very satisfied), as shown above in Figure 17.

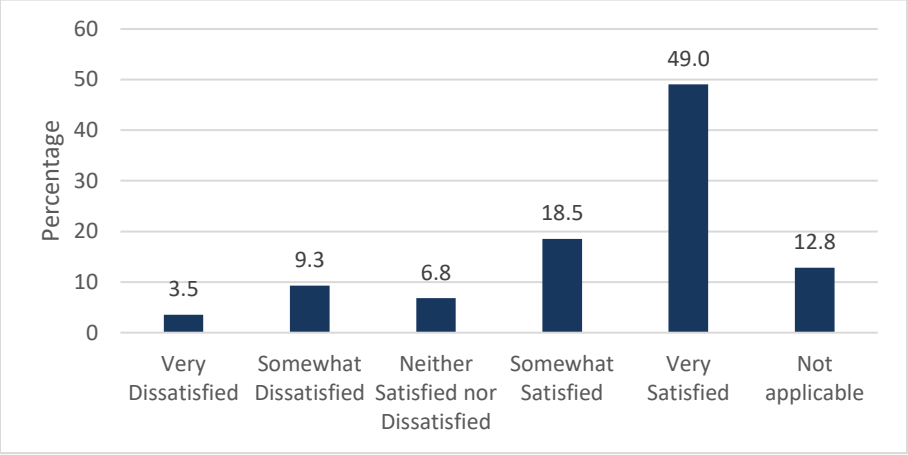

Figure 18. Overall satisfaction with constructive feedback from instructors on assignments and assessments.

Participants' satisfaction with "constructive feedback from instructors on assignments and assessments" (question 2i), was 67.5% (49.0% very satisfied), as shown above in Figure 18. It should be noted that 12.8% of participants chose "not applicable" and is likely reflective of the fact that the CAFJOD program has no instructor interaction.

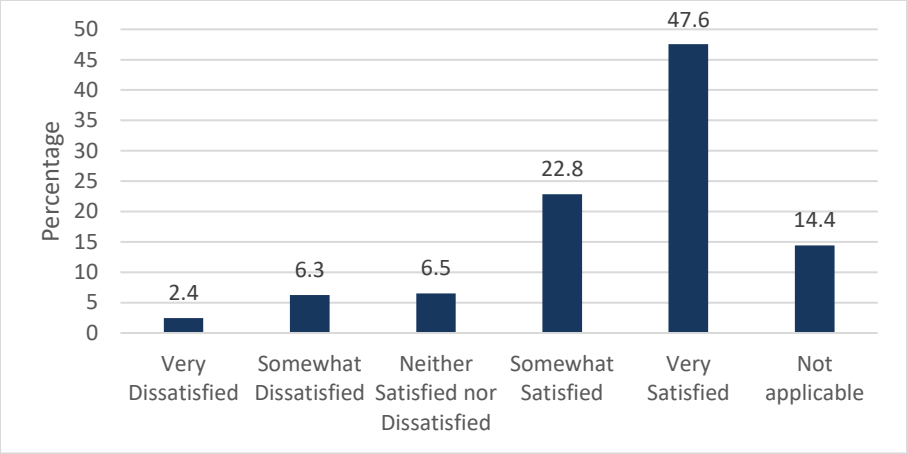

Figure 19. Overall satisfaction with timely feedback from instructors on assignments and assessments.

Participants' satisfaction with "timely feedback from instructors on assignments and assessments" (question 2j), was 70.4% (47.6% very satisfied), as shown above in Figure 19. It should be noted that 14.4% of participants chose "not applicable" and is likely reflective of the fact that the CAFJOD program has no instructor interaction and that assessment feedback is automated (i.e. online quizzes).

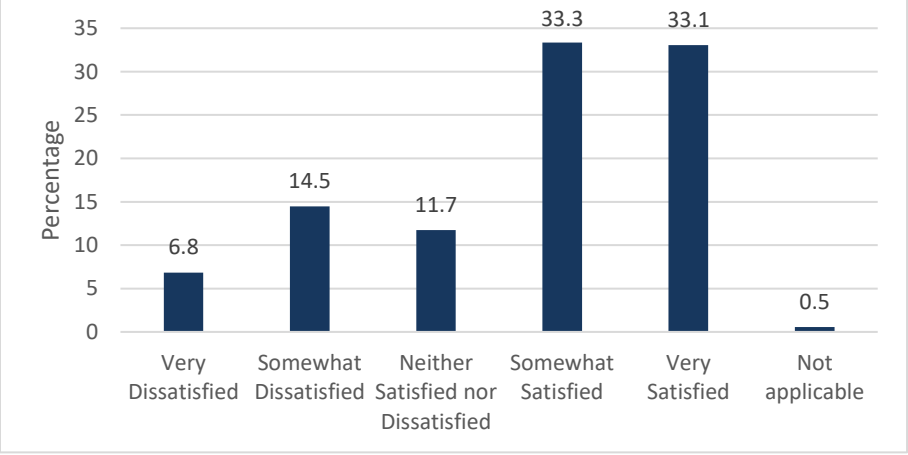

Figure 20. Overall satisfaction with effective course technology (e.g. Defence Learning Network).

Participants' satisfaction with "effective course technology (e.g. Defence Learning Network)" (question 2k), was 66.4% (33.1% very satisfied), as shown above in Figure 20.

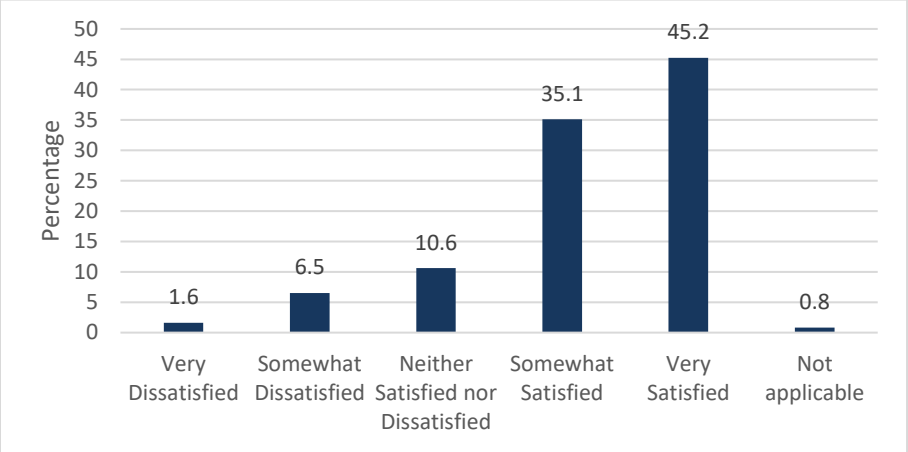

Figure 21. Overall satisfaction with course materials provided that helped to reach course objectives.

Participants' satisfaction with "course materials provided that helped to reach course objectives" (question 2l), was 80.3% (45.2% very satisfied), as shown above in Figure 21.

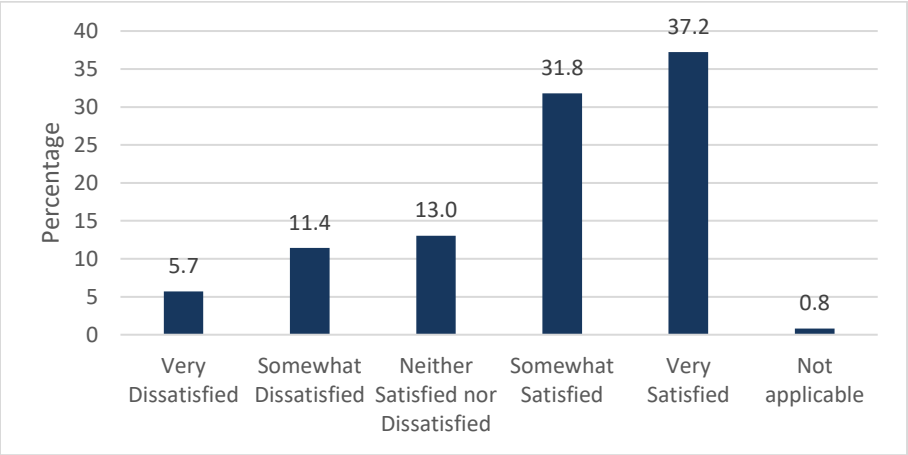

Figure 22. Overall satisfaction with course technology that helped to reach course objectives.

Participants' satisfaction with "course technology that helped to reach course objectives" (question 2m), was 69.0% (37.2% very satisfied), as shown above in Figure 22.

Of note, if we measure a combination of somewhat satisfied and very satisfied together, the three variables that ranked the highest for DL course quality satisfaction, in descending order, are

as follows: 1) clear learning objectives (88.3%); 2) clearly described course assessments (83.1%); and 3) course materials provided that helped to reach course objectives (80.3%).

On the other hand, if we measure a combination of somewhat dissatisfied and very dissatisfied together, the three factors that ranked the highest for DL course quality dissatisfaction, in descending order, are as follows: 1) feelings of being part of a learning community (23.4%); 2) collaborative group work with classmates (23.0%); and 3) effective course technology (21.3%).

Correlations. The table below presents the results of the Spearman correlation analyses that tested thirteen perceptions of course quality variables in relation to the variable of overall DL satisfaction in the CAF.

Table 8

Correlations of Satisfaction with Course Quality Variables with Overall DL Satisfaction

Variables	n	Overall DL Satisfaction
Clear Learning Objectives	367	.523**
Effective Communications with Instructor	317	.441**
Interactions with Classmates	303	.546**
Feelings of Being Part of a Learning Community	342	.579**
Collaborative Group Work with Classmates	293	.553**
Engaging Course Content	364	.529**
Easily Accessible Required Course Materials	363	.409**
Clearly Described Course Assessments	360	.392**
Constructive Feedback from Instructors on Assignments and Assessments	320	.444**
Timely Feedback from Instructors on Assignments and Assessments	315	.439**
Effective Course Technology (e.g. DLN)	364	.549**
Course Materials Provided that Helped to Reach Course Objectives	364	.472**
Course Technology that Helped to Reach Course Objectives	365	.557**

** $p < .01$ (two-tailed); N/A answers have been treated as missing values.

Results of the Spearman correlation indicated that there were significant positive associations between all course quality factors and the overall DL satisfaction variable, to

varying degrees of strength ranging from .392 to .579, which could all be considered moderate. The strongest positive correlations with overall DL satisfaction both involved the satisfaction with course technology and with interactions with peers. The four strongest correlations were: 1) feelings of being part of a learning community (r_s (342) = .579, $p < .01$); 2) course technology that helped to reach course objectives (r_s (365) = .557, $p < .01$); 3) collaborative group work with classmates (rs (293) = .553, $p < .01$); and 4) effective course technology (e.g. DLN) (r_s (364) = .549, $p < .01$). These were followed closely by clear learning objectives (r_s (367) = .523, $p < .01$) and engaging course content (r_s (365) = .529, $p < .01$).

Factors analyses. For the analyses beyond descriptive, an assumption has been made that the data is continuous, with intervals on a normal distribution. The Pearson correlation matrix that was used in the factor analysis showed a wide range of correlations between all course quality metrics and the highest value between a pair is 0.819. For the same pair of variables ("Collaborative group work with classmates" and "Feelings of being part of a learning community") the Spearman rank coefficient was 0.815. Generally, both correlation methods returned similar coefficients. The determinant of Pearson correlation matrix is practically zero proving that some of the variables are perfectly correlated with each other. That means not all variables are orthogonal and, due to this, it was determined that varimax rotation should not be the first choice of rotation method for the factor analysis.

The KMO measure of sampling adequacy is 0.919, as shown in Table 9, which indicated that the sample size was adequate to conduct factor analysis. Its significance p-value is 0, which means that the analysis is 100% significant. Therefore, the factor model is a good description of the data.

Table 9

KMOS and Bartlett's Test: Course Quality

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.919
Bartlett's Test of Sphericity	Approx. Chi-Square	2727.911
	df	78
	Sig.	0.000

The eigenvalue method selected three initial factors that explain 75% of data variance, as shown in Table 10.

Table 10

Total Variance Explained: Course Quality

	Initial Eigenvalues			Extracted Sums of Squared		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.147	54.978	54.978	7.147	54.978	54.978
2	1.437	11.051	66.029	1.437	11.051	66.029
3	1.166	8.969	74.998	1.166	8.969	74.998
4	.632	4.859	79.857			
5	.461	3.545	83.402			
6	.431	3.313	86.715			
7	.368	2.828	89.543			
8	.357	2.744	92.286			
9	.278	2.137	94.423			
10	.198	1.523	95.946			
11	.186	1.432	97.378			
12	.178	1.372	98.750			
13	.162	1.250	100.00			

Note. Extraction method: Principal Component Analysis.

The next step, rotation, allowed for the creation of a simple structure. Oblimin rotation method was used as some of the variables are strongly correlated. Factor correlation matrix, as shown in Table 11, proved that varimax rotation method should not be used as some factors have correlations greater than 0.3.

Table 11

Factor Correlation Matrix: Course Quality

Factor	1	2	3
1	1.000	-.499	.581
2	-.499	1.000	-.554
3	.581	-.554	1.000

Note. Extraction method: Principal Axis.

The Pattern Matrix, as shown in Table 12, shows the factor loadings for the rotated solution, which indicate the strength of the associations between the variables and the factors.

Table 12

Pattern Matrix: Course Quality

	Factor		
	1	2	3
Clear learning objectives			
Effective communications with instructor			.623
Interactions with Classmates		-.848	
Feelings of being part of a learning community		-.857	
Collaborative group work with classmates		-.899	
Engaging course content			
Easily accessible required materials	.737		
Clearly described course assessments			.618
Constructive feedback from instructors on assignments and assessments			.901
Timely feedback from instructors on assignments and assessments			.844
Effective course technology (e.g. Defence Learning Network)	.840		
Course materials provided that helped to reach course objectives	.649		
Course technology that helped to reach course objectives	.878		

Note: Extraction method: Principal Axis Factoring; rotation converged in 12 iterations.

The exploratory factor analysis (EFA) combined the following questions regarding DL course quality into the following three factors:

Factor 1 is associated with positive objective features of DL processes and contains the following metrics:

1. 2g. Easily accessible required course materials.
2. 2k. Effective course technology (e.g., Defence Learning Network).
3. 2l. Course materials provided that helped to reach course objectives.
4. 2m. Course technology that helped to reach course objectives.

Question 2m ("Course technology that helped to reach course objectives") has the highest factor loading value for Factor 1 (0.878).

Factor 2 is associated with negative impacts of DL study linked to lack of interactions with classmates and contains the following metrics:

1. 2c. Interactions with classmates.
2. 2d. Feelings of being part of a learning community.
3. 2e. Collaborative group work with classmates.

Question 2e ("Collaborative group work with classmates") has the highest factor loading value for Factor 2 (-0.899).

Factor 3 is associated with positive subjective features of DL, mainly linked to interactions with instructors, and contains the following metrics:

1. 2b. Effective communications with instructor.
2. 2h. Clearly described course assessments
3. 2i. Constructive feedback from instructors on assignments and assessments.
4. 2j. Timely feedback from instructors on assignments and assessments.

Question 2i. ("Constructive feedback from instructors on assignments and assessments") has the highest factor loading value for Factor 3 (0.901).

The following questions were not selected into the factors:

1. 2a. Clear learning objectives.
2. 2f. Engaging course content.

This may indicate that these two questions are not as important for this study, so they were not considered for further analyses regarding their effects on overall DL satisfaction. The course quality satisfaction metrics that have been retained will be used for further analysis.

Regression. All regression results were combined in the following model summary and coefficients tables for the all applicable cases (AA) data sets.

Table 13

Models by Factor for Course Quality Measures

	Model Summary		ANOVA	
	R	R Square	F	Sig.
Factor 1	0.591	0.349	47.008	0.000
Factor 2	0.619	0.383	58.872	0.000
Factor 3	0.490	0.241	23.520	0.000

According to ANOVA, all three factors the models were significant ($p<0.001$), and the highest R square value was noticed for factor 2 variables explaining 38.3% of total variation of the overall satisfaction. Factor 3 variables model is not that strong (R square=24.1%).

Table 14

Course Quality Regression Coefficients by Factor (for AA Cases)

Models for Course Quality Measure Factors		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Factor 1, n=356	(Constant)	1.560	.218		7.153	.000
	Easily accessible required course materials	-.008	.055	-.009	-.151	.880
	Effective course technology (e.g. Defence Learning Network)	**.238**	**.068**	**.267**	**3.504**	**.001**
	Course materials provided that helped to reach course objectives	.137	.072	.120	1.915	.056
	Course technology that helped to reach course objectives	**.247**	**.074**	**.266**	**3.340**	**.001**
Factor 2, n=288	(Constant)	1.865	.167		11.148	.000
	Interactions with classmates	.120	.081	.131	1.487	.138
	Feelings of being part of a learning community	**.376**	**.078**	**.428**	**4.844**	**.000**
	Collaborative group work with classmates	.084	.082	.093	1.028	.305
Factor 3, n=301	(Constant)	1.603	.280		5.728	.000
	Effective communications with instructors	**.263**	**.076**	**.273**	**3.436**	**.001**
	Clearly described course assessments	.106	.079	.091	1.347	.179
	Constructive feedback from instructors on assignments and assessments	.164	.094	.168	1.749	.081
	Timely feedback from instructors on assignments and assessments	.016	.089	.015	.180	.858

Note. Dependent variable: overall satisfaction. Statistically significant values are shown in bold ($p<0.005$).

Based on the in Table 14, the following questions have significant influence on the overall DL satisfaction:

1) Factor 1 (objective features of DL) – "Effective course technology" ($p<0.005$) and "Course technology that helped to reach objectives" ($p<0.005$). "Course material provided that helped to reach course objectives" has a p-value 0.056, so can be considered significant with $p < 0.1$.
2) Factor 2 (interaction with classmates) – "Feeling of being part of a learning community" ($p<0.001$).
3) Factor 3 (interaction with instructors) – "Effective communications with instructor" ($p<0.005$). "Constructive feedback from instructors on assignment and assessments" has the second coefficient value within the factor (0.164) with $p < 0.1$.

Satisfaction with course quality summary. The percentage distributions showed that the course quality variables that participants rated with the highest percentage of satisfaction were as follows: 1) clear learning objectives (88.3%); 2) clearly described course assessments (83.1%); and 3) course materials provided that helped to reach course objectives (80.3%). On the other hand, the three variables that ranked the highest for DL course quality dissatisfaction, in descending order, are as follows: 1) feelings of being part of a learning community (23.4%); 2) collaborative group work with classmates (23.0%); and 3) effective course technology (21.3%). All 13 course quality variables were found to have significant correlations with overall DL satisfaction with varying degrees of strength ranging from .392 to .579. Due to these significant findings, further analyses were completed.

Factor analyses retained eleven of the variables and three factors were created to enable data reduction for further analyses. The three factors are described as: 1) associated with

positive objective features of DL process (e.g. course materials and technologies); 2) associated with negative impact of DL study linked to lack of interactions with classmates (e.g. lack of collaborative work and feeling part of a learning community); and 3) associated with positive subjective features of DL, mainly through interactions with instructors (e.g. timely and useful feedback). Multiple regression analyses found that all three factors were significant predictors of overall DL satisfactions. Specific variables within the factors were shown to have significant influence on overall DL satisfaction and included variables related to technology; feeling part of a learning community; and effective communications with instructors.

Satisfaction with DL Support Variables

Percentage Distributions. In this series of questions, participants were asked to rate their level of satisfaction with the three variables of support they received during their DL program/course: 1) support from the member's Chain of Command [military hierarchy of supervision]; 2) support from the member's family; and 3) support from the member's co-workers. All these questions were asked based on a 5-point Likert Scale, where one (1) was *very dissatisfied* and five (5) was *very satisfied*. An option of six (6) was given for not applicable.

Individual tables with frequencies and percentages, along with the sample size, are displayed in Appendix H for each of these support questions. Bar graphs are displayed below to give a high-level representation of the results.

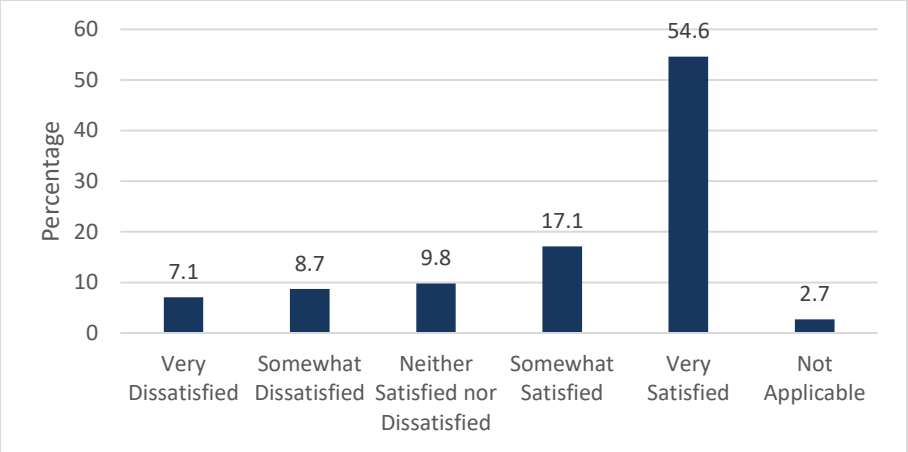

Figure 23. Overall satisfaction with support from Chain of Command.

Participants' satisfaction with support from their Chain of Command (question 3a), was 71.7% (54.6% very satisfied), as shown above in Figure 23. With this variable, it was also notable that 15.8% said that they were not satisfied (7.1% very dissatisfied) with support from the Chain of Command.

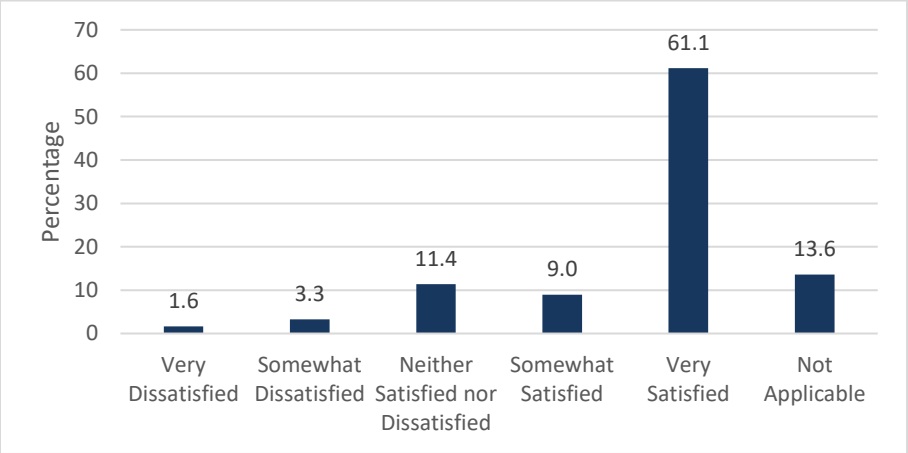

Figure 24. Overall satisfaction with support from family.

Participants' satisfaction with support from their family (question 3b), was 70.1% (61.1% very satisfied), as shown above in Figure 24. 4.9% reported that they were dissatisfied (1.6% very dissatisfied) with the support from their family. It should be noted that 13.6% of participants chose "not applicable" which may indicate that the member had no family which would be relevant in terms of support.

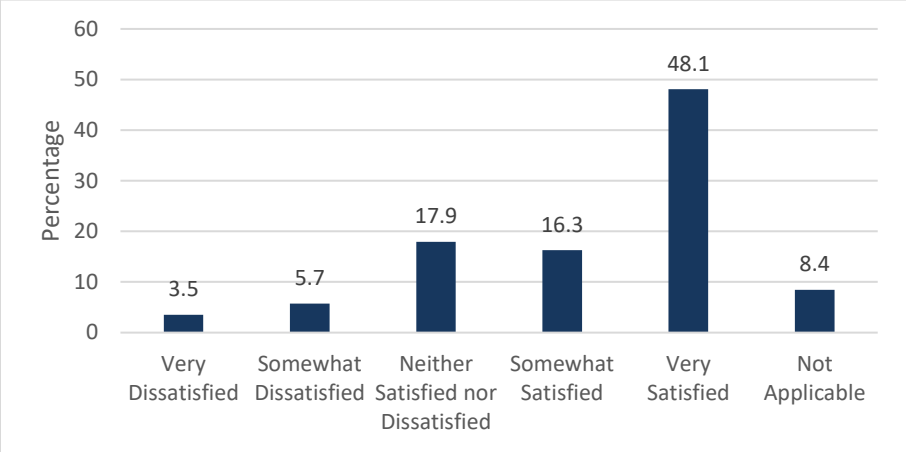

Figure 25. Overall satisfaction with support from co-workers.

Participants' satisfaction with support from their co-workers (question 3c), was 64.4% (48.1% very satisfied), as shown above in Figure 25. 9.2% reported that they were dissatisfied (3.5% very dissatisfied) with the support they received from their co-workers. It should be noted that 8.4% of participants chose "not applicable" which may indicate that the member does not work directly with others or that they did not find co-worker support to be applicable to their CAF DL experiences.

Correlation. Table 15, below, presents the results of the Spearman correlation analysis that explored three satisfaction with support variables in relation to participants' overall satisfaction with their overall DL experience.

Table 15

Correlations of Satisfaction with Support Variables with Overall DL Satisfaction

Variables	n	Overall DL Satisfaction
Support from the Chain of Command	358	.294**
Support from Family	318	.268**
Support from Co-workers	337	.321**

** $p < .01$ (two-tailed); N/A answers have been treated as missing values.

Results of the Spearman correlation indicated that there were significant positive association between all satisfaction with support variables and the overall DL satisfaction

variable, to varying degrees of strength ranging from .268 to .321. These are all considered to be weak correlations. The strongest positive correlation involved the satisfaction with support from co-workers (r_s (337) = .321, p < .01).

Factor analysis. All three support variables were combined into one factor, as shown in Table 16, but the model with the factor values as predictors of the overall satisfaction is slightly weaker than for variables in a bulk (R square 13.2% vs 14.7%).

Table 16

Models by Factor for Support Measures

	Model Summary		ANOVA	
	R	R Square	F	Sig.
Factor 1	0.364	0.132	46.54	0.000
Variables (3)	0.383	0.147	17.391	0.000

Table 17

Regression Coefficients for Support Measures (for AA Cases)

Models for Support measures		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Factor 1, n=307	(Constant)	3.922	.060		65.839	.000
	REG R factor score 1 for 1 analysis	**.422**	**.062**	**.364**	**6.822**	**.000**
Support variables, all applicable cases n=307	(Constant)	2.343	.278		8.424	.000
	Support you received from your Chain of Command during your DL program/course	**.207**	**.068**	**.242**	**3.050**	**.002**
	Support you received from your family during your DL program/course	.039	.081	.034	.485	.628
	Support you received from your co-workers during your DL program/course	.138	.086	.142	1.606	.109

Note. Dependent variable: overall satisfaction. Statistically significant values are shown in bold (p<0.005).

As shown in Table 17, the support factor has a significant impact on the dependent variable (p<0.001). Regarding the separate components, “Support you received from your Chain of Command during your DL program/course” is the most valuable predictor (p<0.005) while the other two measures of support are not significantly important.

Satisfaction with support summary. The percentage distributions showed that: 1) 71.7% of participants were satisfied with the support they received from their Chain of Command; 2) 70.1% of participants were satisfied with the support they received from their family; and 3) 64.4% of participants were satisfied with the support they received from their co-workers. 13.6% of participants chose N/A for the family support question and 8.4% chose N/A for the co-worker support question. It was notable that 15.8% said that they were not satisfied (7.1% very dissatisfied) with the support they received from their Chain of Command during their DL.

All three support variables were found to have significant correlations with overall DL satisfaction with varying degrees of strength ranging from .268 to .321. Due to these significant findings, further analyses were completed.

Factor analyses retained all three of the variables and one support factor was created to enable data reduction for further analyses. It was found that the support factor had a significant impact on overall DL satisfaction. Satisfaction with the support received from the Chain of Command was found to be the most valuable predictor of overall DL satisfaction while the other two measures of support were not significantly important when measured separately.

Perceptions Regarding DL

Percentage Distributions. In Question 6 of Appendix A participants were asked to rate their level of agreement with 26 statements pertaining to perceptions about DL. Due to the large amount of data to be displayed in response to these questions, individual tables with all frequencies and percentages, along with the sample size, are displayed in Appendix H for each of these questions.

Table 18, below, shows the top 10 most-agreed-upon statements in descending order with a percentage of agreement based on a combined percentage of agree and strongly agree answers.

Table 19 that follows indicates the top 10 most-disagreed-upon statements in descending order with a percentage of disagreement based on a combined percentage of disagree and strongly disagree answers.

Table 18

Top 10 Most-Agreed-Upon Perception Statements Regarding DL

Rank	Statement	Percentage
1	CAF members who are DL learners are often required to complete their studies while continuing to be responsible for their normal position workload.	92.1%
2	The CAF relies heavily on DL for training and education.	85.3%
3	DL learners miss out on valuable group discussions due to not being physically face-to-face.	81.5%
4	The convenience and flexibility of DL courses are beneficial to CAF members.	78.0%
5	CAF members suffer from a lack of face-to-face mentoring due to the increase in DL.	77.3%
6	The increasing move to DL by the CAF represents a significant cost reduction in training.	76.1%
7	The quality of DL in the CAF has increased over the past ten years.	73.6%
8	CAF members build less social networks due to the increase in DL.	71.7%
9	DL studies are often significantly disrupted due to military-specific issues such as postings and operations.	70.8%
10	Establishing “Learning Contracts” to be signed by CAF members and their supervisors assigning permitted hours per week for the DL course should be a requirement for all learners of DL courses.	68.5%

Table 19

Top 10 Most-Disagreed-Upon Perception Statements Regarding DL

Rank	Statement	Percentage
1	Students learn more during DL courses than in traditional classrooms.	58.4%
2	The CAF is moving in a good direction by increasing the use of DL.	37.3%
3	Students are more likely to do the required readings in a DL course than in a traditional classroom course.	36.7%
4	DL increases academic dishonesty (e.g., cheating, plagiarism).	35.8%
5	A lack of comfort with computer technology and Internet use makes DL harder for many CAF members than a traditional in-class course.	33.9%
6	Increased use of DL by the CAF increases the quality of life of CAF members due to decreasing the requirements to travel for courses.	28.7%
7	DL in the CAF is higher quality than DL offered by civilian schools (e.g., universities, colleges).	27.6%
8	The CAF has good technical support systems in place to help should any technical problems arise during DL courses.	27.0%
9	DL increases the chance of burn-out for CAF members.	25.6%
10	Students take more time to formulate their thoughts in online forum discussions and, therefore, responses are more meaningful.	25.3%

Correlations. Table 20, below, presents the results of the Spearman correlation analyses that tested 26 perceptions regarding DL variables in relation to the variable of overall DL satisfaction in the CAF.

Table 20

Correlations of Agreement with Perception Statements Regarding DL with Overall DL Satisfaction

Perceptions Regarding DL	n	Overall DL Satisfaction
"The convenience and flexibility of DL courses are beneficial to CAF members."	367	.456**
"The CAF relies heavily on DL for training and education."	365	-.114*
"CAF members build less social networks due to the increase in DL."	365	-.254**
"The increasing move to DL by the CAF represents a significant cost reduction in training."	363	.193**
"DL learners miss out on valuable group discussions due to not being physically face-to-face."	367	-.267**
"CAF members who are DL learners are often required to complete their studies while continuing to be responsible for their normal position workload."	365	-.180**
"Establishing "Learning Contracts" to be signed by CAF members and their supervisors assigning permitted hours per week for the DL course should be a requirement for all learners of DL courses.	360	.135*
"The new generations of CAF members prefer DL over classroom courses."	358	.212**
"DL learners have more reading to do than learners who are physically together in a classroom."	367	-.107*
"DL in the CAF is higher quality than DL offered by civilian schools (e.g. universities, colleges)."	344	.335**
"The CAF is moving in a good direction by increasing the use of DL."	367	.502**
"The quality of DL in the CAF has increased over the past ten years."	359	.313**
"DL courses often cause feelings of isolation."	365	-.296**
"Older CAF members dislike DL."	353	-.248**
"CAF members suffer from a lack of face-to-face mentoring due to the increase in DL."	356	-.277**
"DL courses add extra difficulties not associated with traditional classroom courses."	360	-.261**

"Students learn more during DL courses than in traditional classrooms."	363	.318**
"Students are more likely to do the required readings in a DL course than in a traditional classroom course."	362	.244**
"Self-motivation is often a problem in DL courses."	362	-.101
"Students take more time to formulate their thoughts in online forum discussions and, therefore, responses are more meaningful."	356	.272**
"DL increases academic dishonesty (e.g. cheating, plagiarism)."	362	-.089
"DL increases the chance of burn-out for CAF members."	360	-.220**
"DL studies are often significantly disrupted due to military-specific issues such as postings and operations."	362	-.216**
"A lack of comfort with computer technology and Internet use makes DL harder for many CAF members than a traditional in-class course."	360	-.104*
"Increased use of DL by the CAF increases the quality of life of CAF members due to decreasing the requirements to travel for courses."	361	.334**
"The CAF has good technical support systems in place to help should any technical problems arise during DL courses."	363	.360**

**p<.05 (two-tailed); * p < .01 (two-tailed). N/A answers have been treated as missing values.

Results of the Spearman correlation indicated that there were significant associations between 24 of the 26 perceptions regarding DL statements and the overall DL satisfaction variable, to varying degrees of strength ranging from -.296 to .502, which would all be considered weak to moderate strength correlations. The strongest positive correlation with overall DL satisfaction was found with the perception statement, "The CAF is moving in a good direction by increasing the use of DL" (r_s (367) = .502, p < .01). The second strongest positive correlation with overall DL satisfaction was found with the perception statement, "The convenience and flexibility of DL courses are beneficial to CAF members" (r_s (367) = .456, p < .01).

Factor Analysis. Factor analysis for the perceptions regarding DL statements was based on a Pearson correlation matrix which has a wide variety of values between -0.497 and 0.612, which was found to be similar to the Spearman's correlation analysis findings. The determinant of Pearson correlation matrix is equal to zero. As not all variables were orthogonal, it was determined that the varimax rotation should not be the first choice of methods for analyzing factors.

The Pearson correlation matrix that was used in the factor analysis showed a wide range of correlations between all course quality metrics with the highest value between a pair was 0.819. For the same pair of variables ("Collaborative group work with classmates" and "Feelings of being part of a learning community") the Spearman rank coefficient was 0.815. Again, both correlation methods returned similar coefficients.

As shown in Table 21, below, the KMO measure of sampling adequacy was 0.863 so there was an adequate sample size to conduct factor analysis. Its significance p-value was 0, meaning the analysis is 100% significant. This factor model is, therefore, a good description of the data.

Table 21

KMOS and Bartlett's Test: Perceptions Regarding DL

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.863
Bartlett's Test of Sphericity	Approx. Chi-Square	2637.477
	df	325
	Sig.	0.000

As shown in Table 22, below, the eigenvalue method selected six initial factors that explain almost 56% of the data variance.

Table 22

Total Variance Explained: Perceptions Regarding DL

	Initial Eigenvalues			Extracted Sums of Squared		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.274	24.131	24.131	6.274	24.131	24.131
2	2.535	9.750	33.882	2.535	9.750	33.882
3	1.749	6.728	40.609	1.749	6.728	40.609
4	1.613	6.202	46.812	1.613	6.202	46.812
5	1.204	4.633	51.444	1.204	4.633	51.444
6	1.097	4.218	55.662	1.097	4.218	55.662
7	.934	3.592	59.255			
8	.912	3.508	62.762			
9	.839	3.226	65.988			
10	.810	3.116	69.104			
11	.729	2.804	71.908			
12	.708	2.722	74.629			
13	.672	2.586	77.216			
14	.659	2.534	79.749			
15	.619	2.380	82.130			
16	.562	2.162	84.291			
17	.553	2.129	86.420			
18	.528	2.032	88.452			
19	.497	1.913	90.365			
20	.451	1.735	92.100			
21	.411	1.582	93.682			
22	.381	1.466	95.149			
23	.372	1.432	96.580			
24	.336	1.293	97.873			
25	.298	1.146	99.019			
26	.255	.981	100.00			

Note. Extraction method: Principal Component Analysis

Scree plot, as shown below in Figure 26, suggested keeping only three main factors based, on the elbow method.

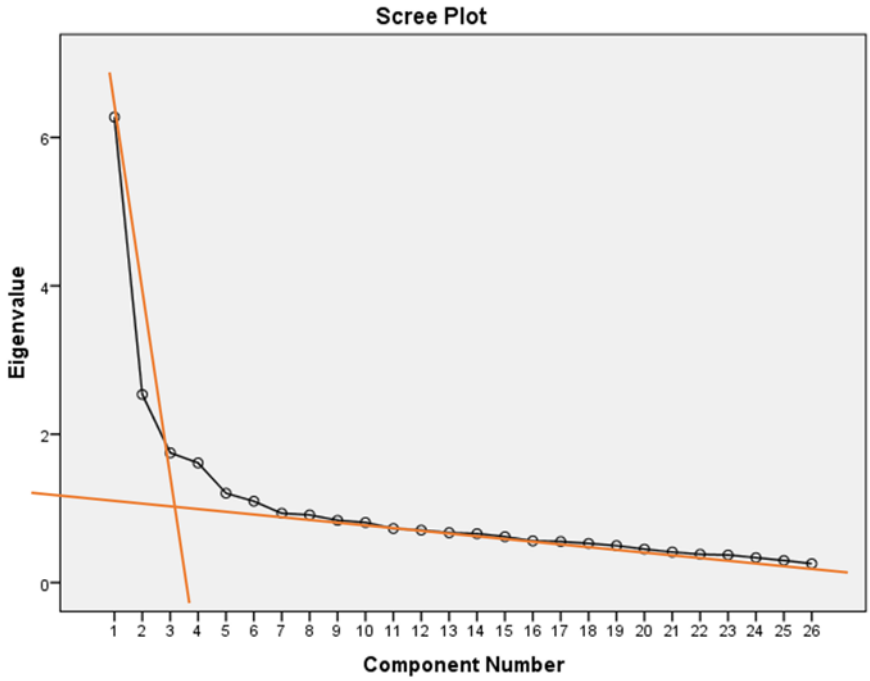

Figure 26. Scree plot suggesting the use of three attitudinal factors based on the elbow method.

Promax rotation method was used as variables have moderate positive and negative correlations. Factor correlation matrix, as shown in Table 23, below, also proved that varimax rotation method should not be used as some factors have correlations greater than 0.3.

Table 23

Factor Correlation Matrix: Perceptions Regarding DL

Factor	1	2	3
1	1.000	-.466	-.370
2	-.466	1.000	.441
3	-.370	.441	1.000

Note. Extraction method: Principal Axis

Table 24

Pattern Matrix: Perceptions Regarding DL

	Factor		
	1	2	3
"The convenience and flexibility of DL courses are beneficial to CAF members."		.580	
"The CAF relies heavily on DL for training and education."			
"CAF members build less social networks due to the increase in DL."	.411		
"The increasing move to DL by the CAF represents a significant cost reduction in training."		.583	
"DL learners miss out on valuable group discussions due to not being physically face-to-face."	.516		
"CAF members who are DL learners are often required to complete their studies while continuing to be responsible for their normal position workload."	.514		
"Establishing "Learning Contracts" to be signed by CAF members and their supervisors assigning permitted hours per week for the DL course should be a requirement for all learners of DL courses.			
"The new generations of CAF members prefer DL over classroom courses."		.429	
"DL learners have more reading to do than learners who are physically together in a classroom."	.488		
"DL in the CAF is higher quality than DL offered by civilian schools (e.g. universities, colleges)."			
"The CAF is moving in a good direction by increasing the use of DL."		.568	
"The quality of DL in the CAF has increased over the past ten years."		.627	
"DL courses often cause feelings of isolation."	.534		
"Older CAF members dislike DL."	.427		
"CAF members suffer from a lack of face-to-face mentoring due to the increase in DL."	.614		
"DL courses add extra difficulties not associated with traditional classroom courses."	.599		
"Students learn more during DL courses than in traditional classrooms."			.715
"Students are more likely to do the required readings in a DL course than in a traditional classroom course."			.563
"Self-motivation is often a problem in DL courses."	.516		
"Students take more time to formulate their thoughts in online forum discussions and, therefore, responses are more meaningful."			.472
"DL increases academic dishonesty (e.g. cheating, plagiarism)."			
"DL increases the chance of burn-out for CAF members."	.501	-.412	
"DL studies are often significantly disrupted due to military-specific issues such as postings and operations."	.608		

"A lack of comfort with computer technology and Internet use makes DL harder for many CAF members than a traditional in-class course."	
"Increased use of DL by the CAF increases the quality of life of CAF members due to decreasing the requirements to travel for courses."	.604
"The CAF has good technical support systems in place to help should any technical problems arise during DL courses."	

The exploratory factor analysis (EFA) combined the following questions regarding perceptions of DL into the following three factors:

Factor 1 is associated with different kinds of negative impact of DL and contains the following metrics:

1. 6c. CAF members build less social networks due to the increase in DL.
2. 6e. DL learners miss out on valuable group discussions due to not being physically face-to-face.
3. 6f. CAF members who are DL learners are often required to complete their studies while continuing to be responsible for their normal position workload.
4. 6i. DL learners have more reading to do than learners who are physically together in a classroom.
5. 6m. DL courses often cause feelings of isolation.
6. 6n. Older CAF members dislike DL.
7. 6o. CAF members suffer from a lack of face-to-face mentoring due to the increase in DL.
8. 6p. DL courses add extra difficulties not associated with traditional classroom courses.
9. 6s. Self-motivation is often a problem in DL courses.
10. 6v. DL increases the chance of burn-out for CAF members.
11. 6w. DL studies are often significantly disrupted due to military-specific issues such as postings and operations.

The highest factor loading value is 0.614 for question ("CAF members suffer from a lack of face-to-face mentoring due to the increase in DL").

Factor 2 is associated with positive changes happening in DL and contains the following metrics:

1. 6a. The convenience and flexibility of DL courses are beneficial to CAF members.
2. 6d. The increasing move to DL by the CAF represents a significant cost reduction in training.
3. 6h. The new generations of CAF members prefer DL over classroom courses.
4. 6k. The CAF is moving in a good direction by increasing the use of DL.
5. 6l. The quality of DL in the CAF has increased over the past ten years.
6. 6y. Increased use of DL by the CAF increases the quality of life of CAF members due to decreasing the requirements to travel for courses.

Question 6l ("The quality of DL in the CAF has increased over the past ten years") has the highest value in factor loadings (0.627).

Factor 3 is associated generally to the positive effects of DL and contains the following metrics:

1. 6q. Students learn more during DL courses than in traditional classrooms.
2. 6r. Students are more likely to do the required readings in a DL course than in a traditional classroom course.
3. 6t. Students take more time to formulate their thoughts in online forum discussions and, therefore, responses are more meaningful.

Question 6q ("Students learn more during DL courses than in traditional classrooms") has the highest correlation with the Factor 3 with value 0.715.

The following questions were not selected into the factors for perceptions towards DL:

1. 6b. The CAF relies heavily on DL for training and education.
2. 6g. Establishing "Learning Contracts" to be signed by CAF members and their supervisors assigning permitted hours per week for the DL course should be a requirement for all learners of DL courses.
3. 6j. DL in the CAF is higher quality than DL offered by civilian schools (e.g., universities, colleges).
4. 6u. DL increases academic dishonesty (e.g., cheating, plagiarism).
5. 6x. A lack of comfort with computer technology and Internet use makes DL harder for many CAF members than a traditional in-class course
6. 6z. The CAF has good technical support systems in place to help should any technical problems arise during DL courses.

Considering the exploratory factor analysis, the total number of dimensions were reduced from 26 to 20 and three factors were identified that were further used in multiple regression analyses, as presented in the next section.

Regression. Table 25, below, shows the perceptions regarding DL model summary by factor for all applicable cases (AA).

Table 25

Models by Factor for Perceptions Regarding DL Measures

	Model Summary		ANOVA	
	R	R Square	F	Sig.
Factor 1	0.374	0.140	4.775	0.000
Factor 2	0.561	0.314	25.440	0.000
Factor 3	0.384	0.147	20.284	0.000

Even though all models are significant based on ANOVA, only the Factor 2 model has a decent R square of 31.4%, indicating a moderate relationship with the dependent variable.

Table 26

Perceptions Regarding DL Regression Coefficients by Factor (for AA Cases)

Models for Perceptions Towards DL Measure Factors		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Factor 1, n=336	(Constant)	6.121	.453		13.499	.000
	CAF members build less social networks due to the increase in DL	-.085	.077	-.079	-1.111	.267
	DL learners miss out on valuable group discussions due to not being physically face-to-face	-.080	.82	-.072	-.974	.331
	CAF members who are DL learners are often required to complete their studies while continuing to be responsible for their normal position workload	.031	0.92	.020	.336	.737
	DL learners have more reading to do than learners who are physically together in a classroom	-.002	.061	-.002	-.028	.978
	DL courses often cause feelings of isolation	-.097	.072	-.092	-1.336	.182
	Older CAF members dislike DL	-.110	.067	-.096	-1.644	.101
	CAF members suffer from a lack of face-to-face mentoring due to the increase in DL	-.009	.090	-.008	-.099	.921
	DL courses add extra difficulties not associated with traditional classroom courses	-.097	.080	-.080	-1.205	.229
	Self-motivation is often a problem in DL courses	.020	.066	.017	.297	.767
	DL increases the chance of burn-out for CAF members	-.061	.066	-.060	-.924	.356
	DL studies are often significantly disrupted due to military-specific issues such as postings and operations	-.110	.076	-.096	-1.460	.145
Factor 2, n=340	(Constant)	1.221	.307		3.975	.000
	The convenience and flexibility of DL courses are beneficial to CAF members	**.233**	**.056**	**.227**	**4.186**	**.000**
	The increasing move to DL by the CAF represents a significant cost reduction in training	.107	.056	.092	1.833	.068
	The new generation of CAF members prefer DL over classroom courses	-.030	.064	-.024	-.461	.645
	The CAF is moving in a good direction by increasing the use of DL	**.297**	**.063**	**.306**	**4.688**	**.000**
	The quality of DL in the CAF has increased over the past ten years	**.152**	**.062**	**.128**	**2.456**	**.015**
	Increased use of DL by the CAF increases the quality of life of CAF members due to decreasing the requirements to travel for courses	-.009	.059	-.009	.150	.881
Factor 3, n=356	(Constant)	2.432	.206		11.833	.000
	Students learn more during DL courses than in traditional	**.311**	**.076**	**.240**	**4.102**	**.000**
	Students are more likely to do the required readings in a DL courses than in a traditional classroom course	.067	.056	.069	1.200	.231
	Students take more time to formulate their thoughts in online forum discussions and, therefore, responses are more meaningful	**.182**	**.060**	**.168**	**.168**	**.002**

Note. Dependent variable: overall satisfaction. Statistically significant values are shown in bold ($p<0.05$).

Based on the AA coefficients table, the following lists, by factor, the questions that were found to have significant influence on the overall DL satisfaction:

1) Factor 1 variables do not have any significant coefficients.
2) Factor 2 measures returned 3 significant coefficients: “The convenience and flexibility of DL courses are beneficial to CAF members” ($p<0.001$); “The CAF is moving in a good direction by increasing the use of DL” ($p<0.001$) and “The quality of DL in the

CAF has increased over the past ten years" ($p<0.05$). "The increasing move to DL by the CAF represents a significant cost reduction in training" is significant with $p<0.1$.

3) Factor 3 returned two significant influencers: "Students learn more during DL courses than in traditional classrooms" ($p<0.001$); and "Students take more time to formulate their thoughts in online forum discussions and, therefore, responses are more meaningful" ($p<0.01$).

Perceptions regarding DL summary. The percentage distributions showed that the most agreed upon perception statement regarding DL was that "CAF members who are DL learners are often required to complete their studies while continuing to be responsible for their normal position workload," with which 92.1% of participants agreed (72.3% strongly agreed). The perception statement that was the most disagreed upon was "Students learn more during DL courses than in traditional classrooms," with which 58.4% of participants disagreed (20.9% strongly disagreed).

Twenty-four of the 26 perceptions statements regarding DL variables were found to have significant correlations with overall DL satisfaction with varying degrees of strength ranging from -.296 to .502. Due to these significant findings, further analyses were completed. The two statements that had the strongest significant correlations with overall DL satisfaction were: "The CAF is moving in a good direction by increasing the use of DL" and "The convenience and flexibility of DL courses are beneficial to CAF members."

Factor analyses retained 20 of the 26 variables and three factors related to perceptions of DL were created to enable data reduction for further analyses. These three factors are described as being: 1) associated with different kinds of negative impact of DL study (e.g. self-motivation issues, increased possibility of burnout for CAF members, feelings of isolation due to DL); 2)

associated with positive changes happening in DL (e.g. convenience, cost reduction for CAF, improved quality of life due to less travelling requirements); and 3) associated with positive effects of DL (e.g. students take more time to formulate thoughts and are mor likely to do the required readings in DL).

It was found that all three factors had a significant impact on overall DL satisfaction. When the variables were measured separately, five statements regarding perceptions towards DL were found to be significant predictors of overall DL satisfaction: 1) "The convenience and flexibility of DL courses are beneficial to CAF members" ($p<0.001$); 2) "The CAF is moving in a good direction by increasing the use of DL" ($p<0.001$); 3) "The quality of DL in the CAF has increased over the past ten years" ($p<0.05$); 4) "Students learn more during DL courses than in traditional classrooms" ($p<0.001$); and 5) "Students take more time to formulate their thoughts in online forum discussions and, therefore, responses are more meaningful" ($p<0.01$).

Factors' Influence on Overall DL Satisfaction

In order to ascertain which of the seven factors identified in the previous sections had the strongest influence on overall DL satisfaction, further regression analysis was completed. All regression results are shown in Tables 27 to 29. As in the previous analyses, the analysis used all applicable (AA) cases from the data sets.

Table 27

Regression Model by Factor Summary (for AA Cases)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.679[a]	.461	.441	.829

Note. a. Predictors: (Constant), F1: DL course quality: positive objective features, F2: DL course quality: negative impact, F3: DL course quality: positive subjective features, F4: Support factor, F5: Perception of DL: negative impacts, F6: Perceptions of DL: positive changes, F7: Perceptions of DL: positive effects.

Table 28

ANOVA[a] for Regression Model by Factor (for AA Cases)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	110.597	7	15.800	23.012	.000[b]
	Residual	129.077	188	.687		
	Total	239.673	195			

Notes. a. Dependent variable: overall DL satisfaction
b. Predictors (Constant), F1: DL course quality: positive objective features, F2: DL course quality: negative impact, F3: DL course quality: positive subjective features, F4: Support factor, F5: Perception of DL: negative impacts, F6: Perceptions of DL: positive changes, F7: Perceptions of DL: positive effects.

According to the ANOVA, this model, which includes the seven factors as the predictors of overall DL satisfaction, is significant at $p<0.0001$ and is, therefore, a good predictor of overall DL satisfaction. As the R square value is 0.46 in Table 21, the model explains 46.1% of total variation of the dependent variable of overall DL satisfaction.

Table 29

Regression Coefficients by Factor (for AA Cases) in Order of Significance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.937	.060		65.987	.000
	F2: DL course quality: negative impact	**-.393**	**.091**	**-.331**	**-4.324**	**.000**
	F6: Perceptions of DL: positive changes	**.346**	**.094**	**.261**	**3.669**	**.000**
	F1: DL course quality: positive objective features	**.292**	**.090**	**.255**	**3.230**	**.001**
	F7: Perceptions of DL: positive effects	.085	.090	.066	.941	.348
	F4: Support factor	-.046	.081	-.039	-.566	.572
	F3: DL course quality: positive subjective features	-.038	.086	-.034	-.441	.659
	F5: Perception of DL: negative impacts	-.014	.080	-.011	-.170	.865

Notes. Dependent variable: overall DL satisfaction; Statistically significant values are shown in bold ($p<0.005$).

Based on the findings in these analyses, three of the seven previously identified factors have significant influence on overall satisfaction. The other four factors are shown to have less influence on the overall satisfaction.

The three strongest influencing factors are described below in descending order of strength:

1) The factor that was found to have the greatest influence on overall DL satisfaction was the second factor of the course quality (satisfaction) set of questions associated with lack of interactions with classmates ($p<0.0005$). The factor has negative loading values for its components, but the regression coefficient for the factor is negative (-0.393), so the following three components have been found to have the highest impact on the overall satisfaction with DL: "Interactions with classmates," "Feelings of being part of a learning community," and "Collaborative group work with classmates."
2) The factor that was found to have the second greatest influence on overall DL satisfaction was the factor that included perceptions regarding positive changes happening regarding DL ($p<0.0005$). This factor contained the following perception statements as components: "The convenience and flexibility of DL courses are beneficial to CAF member," "The increasing move to DL by the CAF represents a significant cost reduction in training," "The new generations of CAF members prefer DL over classroom courses," "The CAF is moving in a good direction by increasing the use of DL," "The quality of DL in the CAF has increased over the past ten years," and "Increased use of DL by the CAF increases the quality of life of CAF members due to decreasing the requirements to travel for courses."
3) The factor that was found to have the third greatest influence on overall DL satisfaction was the factor that included positive objective features of DL course quality ($p<0.005$). A positive impact was shown by the factor that included components such as: "Easily accessible required course materials;" "Effective course technology;" "Course

materials provided that helped to reach course objectives;" and "Course technology that helped to reach course objectives."

Chapter Summary

This chapter presented the quantitative findings derived from the data resulting from the questionnaire at Appendix A. The quantitative data, gathered from the 368 questionnaires, were analyzed using descriptive and predictive analyses. The questionnaires were sent to a portion of a sampling frame of CAF Regular Force members who had completed one of seven courses/programs in the previous three years offered by DL or in a blended format. The population of the sampling frame consisted of 9233 members. 1310 members in this sampling frame were sent an invitation to participate and a total of 368 usable questionnaires were retained. This represents a 28.1% response rate. A descriptive profile was included in this chapter. Percentage distribution tables were created for the demographic, course quality, and support variables, as well crosstabulation tables with various variables in relation to overall satisfaction. Frequency and percentage tables, as well as ordering the most agreed upon and disagreed upon statements, were created for the perceptions towards DL measures.

Overall satisfaction with CAF DL was rated relatively highly, in that 78.0% reported that they were satisfied (34.2% very satisfied) and only 16.0% reported that they were dissatisfied (4.3% very dissatisfied) with their DL experiences overall in the CAF (n=368). Of note, however, when asked which delivery mode the member would choose, all things being equal such as time provided and effort required, 71.7% chose classroom and only 28.3% chose DL (n=346).

Correlation analyses were completed for three of the demographical variables that consisted of ordinal data, including satisfaction with of course quality variables, satisfaction with

support variables, and general perceptions towards DL variables, in relation to overall DL satisfaction. The three demographic variables that consisted of ordinal data, previous DL experience, age, and years of service, had a significant correlation with overall CAF DL satisfaction but all were of a very weak strength. Of note, all course quality variables yielded a significant positive correlation of a moderate strength. The strongest amongst these were feelings of being part of a learning community, course technology that helped to reach course objectives, collaborative group work with classmates, and effective course technology. All support variables yielded a significant positive correlation with a weak strength, with the strongest being satisfaction with support from co-workers. Pertaining to the perceptions towards DL statements, 24 of 26 had significant correlations with overall DL satisfaction, to varying strengths.

Exploratory factor analysis was completed in order to facilitate data reduction to be used in multiple regression analyses. Seven factors were identified. Three of these factors pertained to course quality: 1) associated with positive objective features of DL process (e.g. course materials and technologies); 2) associated with negative impact of DL study linked to lack of interactions with classmates (e.g. lack of collaborative work and feeling part of a learning community); and 3) associated with positive subjective features of DL, mainly through interactions with instructors (e.g. timely and useful feedback). The fourth factor was associated with support (e.g. from family, co-workers and Chain of Command). The final three factors were associated with perceptions towards DL: 1) associated with different kinds of negative impact of DL study (e.g. self-motivation issues, increased possibility of burnout for CAF members, feelings of isolation due to DL); 2) associated with positive changes happening in DL (e.g. convenience, cost reduction for CAF, improved quality of life due to less travelling requirements); and 3)

associated with positive effects of DL (e.g. students take more time to formulate thoughts and do required readings in DL).

Multiple regression analyses on each type of variables (i.e. course quality, support, and perceptions towards DL) found that all seven factors contributed to overall DL satisfaction, to varying degrees. The specific course quality measures that had the greatest impact on overall DL satisfaction included those pertaining to course technologies, materials, and effective communications with other students and instructors. The specific perception towards DL statements that had the greatest impact on overall DL satisfaction included those pertaining to DL convenience, that the CAF is moving in a good direction, that DL has improved, and that students learn more and can better formulate their answers in a DL course. The specific measure of support from the Chain of Command, from within the support factor, was found to be the most valuable predictor.

A further multiple regression analysis, based on the seven factors, determined their order of strength as predictors of overall DL satisfaction. In this further step of analysis, the strongest factor that predicted overall DL satisfaction was found to be the course quality factor associated with a lack of satisfaction regarding interactions with classmates and feeling part of a learning community. This was followed by the factor that included perceptions regarding positive changes happening in DL, such as that the perceptions that the quality of DL is increasing, and that DL provides flexibility and convenience. The third strongest factor that predicted overall DL satisfaction was related to positive objective course quality features, such as those components related to satisfaction with course technologies and materials.

The qualitative analyses of the data derived from the open-ended questions and interviews will be presented in the following chapter.

Chapter 5. Qualitative Analysis: Results

Overview

The purpose of the qualitative data collection was to provide data for inductive analyses that would capture the CAF members' experiences in their own words in order to add depth to the findings of the quantitative phase of this research. The qualitative data were drawn from three sources: the nine open-ended questions responses from the questionnaires; the transcripts of 12 interviews; and the researcher notes that were added to a reflexive journal following each interview. The three sources of data were combined as they were very similar in nature, although the interview data added more depth and included more examples of DL-related personal stories. This qualitative analysis was conducted through the aid of the qualitative research analysis software NVivo.

The data from the nine questionnaire open-ended questions was extracted from the data sets in SPSS into Microsoft (MS) Word documents. The answers that were provided in French were translated using Google Translate and then verified by a Native French speaker. This data was then imported into NVivo for analysis. The 12 interview audio recordings lasted between 13:32 and 52:41 minutes, dependent on how much information the participants wanted to share in response to the interview questions outlined in Appendix B. The interviews were transcribed by an assistant. I then verified all the transcripts to the audio files and emailed the transcripts to the participants to review and verify that the transcripts were accurate. After some small corrections suggested by interviewees, all participants agreed that the transcripts accurately captured the interviews. All transcripts were imported from MS Word files into NVivo for analysis.

In the following sections, an explanation of the process that enabled purposeful selection of interview participants will be detailed along with demographic information and interview format for each participant. The sample of members who answered the open-ended questions of the questionnaire were defined in the descriptive profile of Chapter 4. This chapter will continue by presenting the qualitative findings of this dissertation research. First, the code frequency analyses will be presented with a range of sample comments for three open-ended questionnaire questions related to the greatest satisfiers and dissatisfiers for DL in the CAF and the members' reasons for preferring one mode of delivery over the other. Second, the thematic content analysis, including some additional coding frequency analyses, will be presented for the remaining data. The thematic content analysis will explore the remaining data from the open-ended questionnaire questions, the 12 interview transcripts, and the researcher notes taken following the interviews. The chapter will conclude with a summary of the qualitative findings.

Purposeful Selection of Interview Participants

The request for interview volunteers was included at the end of the completed questionnaire, as shown at the end of Appendix A. All interviewees had completed the questionnaire in the preceding months (between 7 May 2018 and 2 July 2018) and participated in the interview session during the month of August 2018. My original goal was to interview at least 10 members, up to a maximum of 20, trying to maximize the variation of participants and up to the point where I had reached saturation of the topic. I ultimately received responses from 22 volunteers who offered to participate in an interview. I purposely chose to interview participants from all of the seven programs/courses, ensuring that there was sufficient female representation and that a range of ranks were represented across Officers and NCMs. After assuring a good variation of participants, I also prioritised those who were presently posted in the

National Capital Region to enable face-to-face interviews, which provided the ability to read subtle body language cues.

Of the 22 volunteers, 12 interviews were held. The mean age of the interviewees was 44 years. There were 10 males and 2 females interviewed, similar to the CAF gender distribution where females represent approximately 15% of the total (National Defence, 2017, p.23). Eight of the 12 interviews took place in person and four took place by distance using various technologies (i.e. Skype, teleconference and DND internal videoconferencing system). The table below further details the profiles of the 12 interview participants.

Table 30

Interviewees' Demographic Profiles and Interview Format

Interviewee #	Rank Group	Age	Gender	First Official Language	Course/ Program Completed	Interview Format	Interview Length
1	Senior Officer	49	Male	French	JCSP	In-person	37:10
2	Senior NCM	45	Female	English	SLP	VTC	41:25
3	Junior Officer	39	Male	English	CAFJOD	In-person	26:02
4	Senior NCM	49	Male	English	SLP	In-person	47:18
5	Subordinate Officer[a]	33	Male	English	PLQ	TC	13:32
6	Senior NCM	51	Male	English	SAP	VTC	37:06
7	Senior NCM	42	Male	English	ILP	TC	39:24
8	Senior NCM	42	Male	English	ILQ	In-person	46:44
9	Senior Officer	48	Female	English	JCSP	In-person	52:41
10	Senior NCM	39	Male	Bilingual[b]	ALP	In-person	33:21
11	Senior Officer	49	Male	English	JCSP	In-person	47:27
12	Senior Officer	43	Male	English	JCSP	In-person	30:57

Notes. [a] Subordinate Officer (Cadet); was a Junior NCM during the PLQ course
[b] Speaks English and French equally and considers both languages his first official languages
Abbreviations: VTC, Video Teleconference; TC, Teleconference.

Qualitative Findings Overview

Answers to the nine open-ended questions from the questionnaire, the interview transcripts, and reflexive journal entries written following the interviews yielded the qualitative data that were analyzed and presented in this chapter. Some of the questionnaire responses (from questions 4, 8, 9, 10, and 13, as found in Appendix A) were analyzed separately for code

frequency analyses. The interview transcripts, reflexive journal entries, and questionnaire responses from questions 5, 7, 8, 11 and 20, as found in Appendix A, contributed to the thematic content analysis that will also be presented within this chapter. The following sections will include code frequency analyses on the topics of greatest satisfiers and dissatisfiers with CAF DL experiences and the reasons why members chose one delivery mode over the other. The five themes in the thematic content analyses are then presented, with several other coding frequency analyses within. A summary of the qualitative findings will conclude the chapter.

Code Frequency Analyses

The survey's open-ended questions 4, 8, 9, 10, and 13, as found in Appendix A, were all analyzed separately for coding frequencies. The raw data from each question were read several times and then responses were analyzed line by line within NVivo. Organically emerging codes were assigned and the frequencies of topic mentions, corresponding to the codes, were tallied. As was mentioned in the methodology chapter, the use of numbers in qualitative findings, such as these, should not be considered statistically significant but merely complementary information to help interpret the qualitative findings.

Greatest satisfiers regarding CAF DL experiences. In this open-ended survey question, CAF members were asked what their greatest satisfiers regarding their CAF DL experiences were. A total of 334 topic mentions were coded in the responses to this question. Open coding of these topic mentions yielded 14 different codes.

The most frequently mentioned topic was flexibility, with 82 mentions. This code included items such as the ability to go at one's own pace and convenience. The second most frequently mentioned topic was the ability to stay in one's location, with 59 mentions, which included items such as being with one's family, and not having to travel or be posted to another city. The full

list of codes with their associated number of mentions is shown in Table 31 below in descending order of frequency.

Table 31

Greatest CAF DL Satisfier Codes in Descending Frequencies

Serial	Code	Frequency
1	Flexibility	82
2	Ability to stay in one's location	59
3	Quality of content	39
4	Instructors and staff	30
5	Course quality/ design	25
6	Interaction and networking with peers	23
7	Working at home	20
8	LMS discussion forums	18
9	Ability to continue working in job	14
10	Technology	13
11	Support received from Chain of Command and co-workers	4
12	Ability to download and reuse content	3
13	Easy workload	3
14	Cost efficient training for the military	1

For flexibility, the topic that was the most frequently mentioned, was that they were satisfied with the freedom DL provided through flexibility in scheduling coursework when time allowed during their workdays. One member stated, "I could do it right at my desk." Some liked the flexibility that they could decide to do DL even after hours. Participants mentioned that they were satisfied that they could work at home, in the office, or in any geographical location even "while away from home unit" and "anywhere there is internet." The ability to work at one's pace and "not on someone else's schedule" were also stated as satisfiers. "My schedule was my own," stated one member, "not driven by a regular classroom schedule."

Greatest dissatisfiers regarding CAF DL experiences. In this open-ended survey question, CAF members were asked what their greatest dissatisfiers regarding their CAF DL

experiences were. A total of 425 topic mentions were coded in the responses to this question. Open coding of these topic mentions yielded 12 different codes.

The most frequently mentioned topic was a lack of meaningful interactions and networking with peers, with 87 mentions. The second most frequently mentioned topic was technological issues, with 67 references. The full list of codes with their associated number of mentions is shown in Table 32 below in descending order of frequency.

Table 32

Greatest CAF DL Dissatisfier Codes in Descending Frequencies

Serial	Code	Frequency
1	Lack of meaningful interactions and networking with peers	87
2	Technological issues	67
3	Difficulties balancing job with DL	58
4	Issues with course quality of design	54
5	Lack of meaningful interactions with instructor(s) and staff	41
6	Issues of work/life balance, including family	40
7	Issues with course content	32
8	Negative general comparisons to residential courses	21
9	Course requirements too arduous	12
10	Issues with course logistics	10
11	Feeling isolated	2
12	Difficulty with self-motivation	1

For dissatisfaction regarding a lack of meaningful interactions and networking with peers, the most highly mentioned topic, participants often stated that they felt that the discussions online were less engaging than if the participants were in class together and that DL did not offer the same opportunity to build strong networks. One JCSP DL graduate, for example, stated that the "interaction was very stilted as none of us knew each other." This concern, however, improved after the residency portion of the course when the online interactions became "more free-flowing and engaging." Other members stated that DL offered an "impersonal approach to learning" and that the group discussions seemed "disingenuous," "artificial," "forced," and "stale

and 'polite'" in contrast to classroom discussions that tended to be "more spirited and honest." Another member said DL "collaboration was non-existent." One ILP graduate described their biggest dissatisfier as "le manque de discussion de groupe qui apporte des points de vue différents et permet d'élargir la compréhension et vision sur le sujet [the lack of group discussion that brings different points of view and broadens understanding and vision on the subject]."

Reasons for choosing classroom or DL as preferred mode of delivery. In the questionnaire, participants were asked which mode of course delivery they would choose if they were to enrol themselves in a professional development course and had to choose between DL or a classroom course, with all other factors being equal (e.g., time provided, effort required). Of the 346 respondents to this question, 71.7% said that they would choose classroom and 28.3% said that they would choose DL. A follow-up open-ended question asked the participants to explain why they would make the choice they did regarding their preferred mode of training delivery. A total of 504 references to this question were coded, resulting in 36 different codes. The codes were divided into two categories: 20 codes, with 404 references within, represented reasons for the participant's choice of classroom as their preferred mode of delivery and 16 codes, with 100 references within, represented reasons for the choice of DL as their preferred mode of delivery.

The most highly referenced code for those who preferred classroom learning was networking and peer interactions, with 161 references of the 404 total references in this category. The second most referenced code within the category for the classroom preference was better interactions with instructors and staff, with 116 references. Some of the other most frequently used codes for reasons why participants preferred classroom included: more focused learning (27

references); better learning and retention (23 references); and a decreased need to juggle obligations (19 references).

The code that was the most highly referenced for those who chose a preference for DL was flexibility, with 24 references of the 100 total references in this category. The second most referenced code within the category for the DL preference was the ability to be with one's family with 13 references.

Thematic Coding Analysis

Further inductive qualitative analyses were completed on three sources of data: 1) responses to the open-ended questions 5, 7, 8, 11, and 20 of the questionnaire, as found in Appendix A; 2) transcripts produced from the 12 interviews conducted; and 3) researcher notes written after each interview as part of the reflexive journal. The raw data used in this thematic coding analyses comprised of approximately 180 single-spaced pages.

The data were inductively analyzed using the following steps: 1) interview transcripts, questionnaire open-ended question responses, and researcher notes were read several times to get a sense of the overall content; 2) initial codes were created with the intention to allow further codes to emerge organically throughout the coding process; 3) raw text was analyzed line by line within NVivo and codes were assigned; 4) similar codes were joined to create categories; and 5) similar codes were joined to create themes.

Within this analysis, 89 codes were created (examples shown in Appendix I). Similar codes were then combined to create 20 categories (example shown in Appendix J). Further reflection upon these categories led to the formation of five themes in which further analysis enabled the interpretation of the data in order to shed additional light on the research questions.

The outcome of the coding, categorization, and further qualitative reflection of the analysis was the following five themes:

1. balancing work, DL, and personal life;
2. technology;
3. issues regarding DL course quality;
4. military specific considerations affecting DL experiences; and
5. members' views on present and preferred future use of DL in the CAF.

Theme 1: Balancing Work, DL, and Personal Life

The first theme that emerged from the thematic content analysis was titled, "Balancing Work, DL, and Personal Life." As I had heard prior to this research that members often have difficulties finding enough time to devote to DL, a survey open-ended question asked members to comment on the time that they were given during working hours for their DL. As a primer for this category, a code frequency analysis was completed on this question. The answers to this question yielded 383 references that were coded into 13 different codes. The code that was the most highly referenced was "time as available," with 95 references. The second most referenced code was "one day per week," with 80 references. The third most referenced code was "no time," with 72 references. These most highly referenced codes provide evidence that there is, indeed, a wide range of time during working hours being allotted to, and/or being used by, different members during DL courses.

Within this theme, 13 codes were formed into the following three categories, as illustrated in Figure 27 below: 1) DL support provided by the Chain of Command; 2) Balancing Work and DL; and 3) Balancing Personal Life and DL.

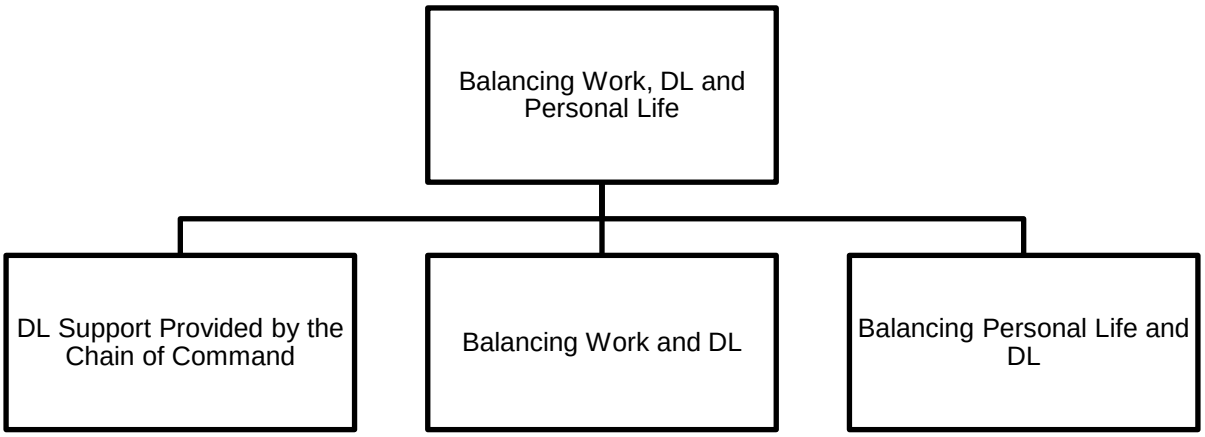

Figure 27. Theme 1: Balancing work, DL and personal life.

DL support provided by the Chain of Command. The first category within this theme contained members' comments and perspectives regarding the support they were provided by their Chain of Command during their DL experiences. Chain of Command is a military term that means the hierarchy of authority, or the levels of supervision above the member. It may mean the direct supervisor but may also include the levels of supervision higher than the direct supervisor. This category included many comments regarding the time that was provided during the regular work week to complete DL programs, including in comparison to other members, as well as more general statements, both positive and negative, regarding support received such as encouragement and discussing course topics with supervisors.

As previously mentioned, the time provided for DL seems to vary greatly. These variances seem to be dependent on the members' position, workload, rank, the level of autonomy over one's work schedule, and individual decisions made by each members' Chain of Command. Although some members were provided a day of dedicated time a week to work on their

programs, as is often recommended in the course training plans and instructions, some were provided no time and had to work on these programs during their personal time.

One JCSP graduate stated that the first time he enrolled in the program, he had to withdraw due to family obligations. He stated that "when I approached my Chain of Command for time during working hours to participate in the program and complete assignments, I was informed that it was meant to be done at home and they could not afford to provide me time off." Another, a graduate from the CAFJOD program, stated that the majority of members are "told to suck it up" and to complete their work when they can. This response differs greatly from a statement made by another JCSP graduate who said that "my CoC was excellent in this regard. They gave me the necessary time off."

The differences with time provided by the Chain of Command were apparent across many of the programs. Although sometimes members said that they were supported, the actual high tempo of their work did not allow them to take the time off. As one CAFJOD graduate stated, "My CoC was also supportive, but I had to juggle low unit manning leading to me doing work mostly on my own time." A Senior NCM, who had graduated from the ILP, said that they had heard different stories that ranged from those who were "given the day and there was no issue" and those whose Chain of Command gave an, "eye roll and laughed and said no." Another, a JCSP graduate, said that there was "no balance or equity between members attending the course. Some had two days and some almost none." One member stated that time devoted to DL should be mandatory to "prevent the student from having to 'beg' for the time." Some members mentioned the learning agreements that are provided for some of the courses and that are meant to be signed by the supervisor. One member stated that "the contracts are meaningless when you have a heavy workload" and another stated that "operations will always take priority regardless."

Another interviewee made an interesting point that there may be some cultural factor in play in that “there is a tendency in the military where sacrifice is seen as cool.” Members, he stated, that are “given the chance to take time off to do these courses, will choose not to, or will convince themselves that work won't allow it or if I leave work for a day the world will fall apart.” It appears that, for various reasons, there is a disparity across the CAF with regards to the focused work time members are using for their DL studies.

Regarding CoC support, other than time permitted, there were a range of positive and negative comments. In the realm of positive support, members commented that the support they received was “wonderful,” “extremely good,” “absolutely fantastic,” and “excellent.” One Junior Officer who had graduated from the CAFJOD program stated that the CoC understands “the nature and importance of online learning.” On the other hand, some members commented that the support they received was only provided “grudgingly.” One Senior NCM stated that there is often a “lack of understanding of how important this education is.” One CAFJOD graduate stated that there was never any “concern with progress beyond the chain of command saying to get it done. I have never heard anyone in the chain of command comment positively on the utility or value of the training, or how they could support progress.” Another member stated that they did not have a military supervisor throughout their program and said that their civilian Director General, “was very upset I was doing this course and did not understand the importance” of the program. Yet another stated that the CoC was supportive, “but continued to expect me to perform all of my primary job responsibilities regardless of DL assignment pressures.” Another stated that they were in a very demanding position and were “told directly not to let DL interfere” with their work. Support provided and attitudes towards the importance of the DL

programs shown by the CoC seem to differ dependent on the members' individual workplace situation.

Balancing work and DL. The second category within this theme contains members' comments and perspectives regarding balancing their work and DL. This category included mainly comments regarding members trying to multitask their DL efforts while dealing with workplace issues and distractions. While some members reported having enough time to devote to their DL, many members reported having difficulties juggling their work and DL responsibilities and that any time away from the workplace only meant that their workload would pile up for their return. One member, for example, stated that "needing to work 50 to 60 hours per week at my job, then to have 25 hours of DL work really soured me on the experience." Another said that the "overall demand on my schedule was a tremendous dissatisfier." "The continued effort of maintaining both unit's scheduled duties & responsibilities," said one Senior NCM who had completed the ALP, "and working late into the evening after hours including weekends was not beneficial in respect to a valuable or effective learning environment." Although stated that "the day to day business does not slow down or stop so you are still expected to deliver." Another member stated that although they did receive time out of the office, "les courriels ne cessent de rentrer et que la journée perdue doit être rattrapée les jours suivants ce qui créé un stress supplémentaire [the e-mails keep coming and the lost day must be recovered the following days which creates additional stress]." Another member stated that the DL workload and resulting effort required varied from week to week making it difficult to impart to the CoC the time required for the DL course.

Members also mentioned their co-workers as a factor in balancing work and DL. Most members stated that their co-workers were supportive of their efforts using statements such as

"understanding and accommodating" and some said that they were offered advice. One member stated that their co-workers "happily picked up any slack I left behind," and another said that "at times co-workers would cover shifts for me to access the course." Another member stated that their co-workers were helpful in "providing assistance in finding reference material or reviewing work." Co-workers often seemed to be empathetic to the DL efforts made as one member stated that "everyone goes through the same cycle nowadays so it's not an issue because everyone is aware of it." One Senior NCM, whom I interviewed, stated in response to my questions about taking time away from work to focus on DL, "I wouldn't have felt comfortable because I knew that I would be putting my peers in a situation where they would have to work more to cover off for me." Another Senior NCM stated that taking a day a week was not practical in his leadership position and according to him, "it comes down to a feeling of personal responsibility towards members and loyalty to the unit, resulting in extra work stress..."

Members commented on distractions in the office while trying to focus on their DL. One member mentioned the needs of "dealing with other peers requiring assistance on an urgent matter" and that sometimes co-workers "cause interruptions at work." Another member stated that the workplace is "not a "quiet" place to complete this type of training." One member stated that "people would stop by and interrupt" and "it was difficult to keep the flow." Another member stated that they had to "hide away in other offices to progress work." "Distractions exist," one member agreed, "sometimes in impressive quantities." An environment with interruptions, one member aptly stated, "does not allow for a conducive learning environment."

Although it seems, based on the preceding member comments, that DL requires members to take part in an often-difficult juggling act of work life and DL responsibilities, one Senior NCM and ALQ graduate shared his opinion that there is a personal responsibility involved as

well. “Everything,” he stated, “was dependant on me and my ability to communicate my needs, delegate work, or hold on to my work and do it all simultaneously.”

Balancing personal life with DL. The final category within this theme contained members’ comments and perspectives regarding balancing their personal life and DL. This category included mainly comments concerning family, working during personal time, how DL affects their quality of life and effects their DL experiences have had on their mental and physical health. Family was a topic often referenced for DL satisfaction (i.e. the ability to stay in one’s location with their family instead of travelling to a classroom setting). As one member stated, “for the most part people appreciate the fact that they can stay at home with their family” while completing their DL. Others, however, felt that it would be easier to go away from the family so that they could focus completely on the course. Negative family issues can also result from the difficulties in juggling family responsibilities during the DL.

Some members stated that their family was very supportive during their DL experiences, stating that their family gave “complete support” and were “incredibly patient and understanding.” Others, however, stated that the DL caused various issues within their family life. One member, for example, stated that the “family was accepting, but resentful of the amount of time that was required during the course.” One JCSP graduate stated that “this was 2 years of hell and I do not feel that what I got out of it was worth the toll it took on my personal health and on my family.” Another member stated, “Ma femme étais très contrarié du temps excessif consacré se cours ce qui créa un peu de friction dans notre vie de couple [My wife was very upset about the excessive time spent on this course, which created a bit of friction in our life as a couple].” Another member stated that, with the amount of readings and deliverables, it made “quality family time difficult if not impossible.” Another said that it “contributed to erode

my life at work and at home" and yet another stated that it "caused strain on my relationship with my spouse."

One Senior NCM and ALP graduate, stated that DL was difficult to incorporate in his life. "I am a single parent of three," he said, and "my time at home after hours should not be used to conduct DL training." One Senior NCM stated that his wife, also a military member, was deployed during his DL. "I would have to work on that [DL course] after work, when I got home which would usually be about, you know, 5 PM. After feeding kids, if I had time, I would get in front of the computer and do DL." The DL lasted approximately five weeks and he said that there was no work/life balance during that time which he referred to as, "just a snowball of nastiness." One JCSP graduate aptly stated that "the time taken away from my family is irreplaceable and far too high a cost."

Although many members said that they were permitted to complete their DL programs on working hours, many members also commented specifically on working on their DL during their own personal time. One member, for example, said that the "onus is placed on students to expend time late at night and on weekends to complete material." One mentioned that even with the one day a week given, it was not enough to complete the course load. The member stated that they "still sacrificed some 4-10 hours per week" of their own time. Another member stated that DL "ruins any recreation time you take "off" because you are constantly aware that any time you take off gets you further behind in your course. There is a constant weight on your shoulders to just power through and "get 'er done"." Another member lamented that he absolutely dreads the idea that he will have to start his SLP as they said that it "will wreck my summer plans as I sit in the basement and read." One SLP graduate stated that he is "always dissatisfied with the

knowledge that the DL period will constitute a significant portion of the work being done outside of normal work hours."

Several members referred to using their annual vacation leave to work on their DL courses. One SAP graduate also stated that he had "completed another [DL course] on post deployment leave from operations."

Although many members felt that DL enabled a better quality of life through allowing them to stay in one location with their family instead of travelling to a classroom setting, the additional workload also had negative effects as reported by many members. Comments regarding quality of life and work/life balance were common in member responses. One member, for example, stated that the workload of DL was "exhausting and detrimental to quality of life." Another stated that "the fatigue I experienced by the end of the program was causing significant personal and workplace problems." Another stated that the DL experience came with "a cost to my mental health." I averaged between 5 and 6 hours sleep a night," one said, "in order to make ends meet." One JCSP graduate said that the DL extra workload "contributed to erode my life at work and at home, with an almost untenable total average workload of 70 hours per week for two years." "You can't burn the candle at both ends," another member aptly stated. Several members used the word "burnout" in their description of their DL experiences and one stated that the additional DL workload "negatively impacted my ability to disconnect from work and receive a good night sleep." It was also stated that the disparity in time allowed for DL studies between members, "creates animosity between peers and burnout in soldiers."

Within this theme, issues of time provided, support, and issues in balancing work, personal life and DL course work were explored. While there were many positive comments provided by members within this theme, there were also many areas of concern.

Theme 2: Technology

"Technology" was the second theme that emerged from the thematic content analysis. A total of 17 codes were formed into the four following categories within this theme: 1) Accessibility; 2) Usability of technologies supporting DL; 3) Learning Management Systems; and 4) Perceptions regarding DL technology in the CAF (Figure 28).

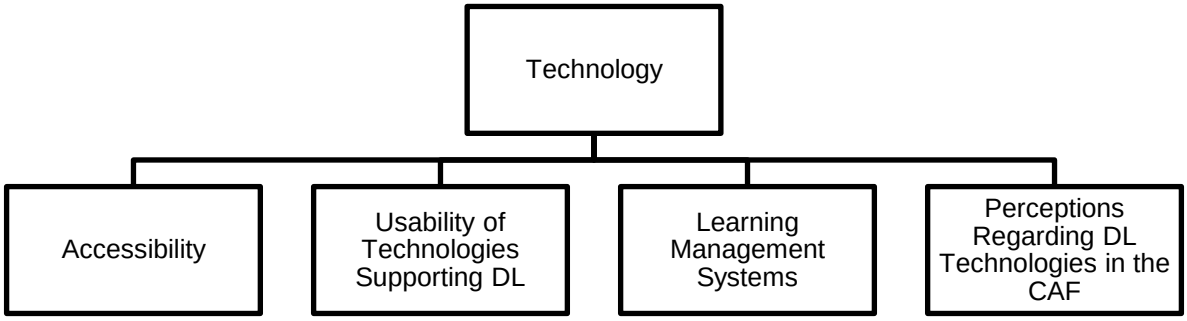

Figure 28. Theme 2: Technology.

Accessibility. The first category within this theme contained members' comments and perspectives regarding accessibility. This included issues of bandwidth and connectivity, the system being down or crashing, and accessibility issues related to security and broken reference links. Many members commented about the fact that they had difficulties during their DL with connectivity. This was brought up for office and home settings, but also in operational settings such as on ships and on overseas deployments, which will be discussed later and more in depth in the military-specific considerations theme.

Members mentioned that they liked the fact that they could access their DL from their home, outside of their workplace computer. One member said, "the system is very user-friendly because it exists outside of the DWAN [Defence Wide Area Network] system, very easy to use, home computer, home-based internet." Another agreed saying, "what I really like is I don't need a DWAN connection to do it. I can go on to DLN [Defence Learning Network] and do it

anytime, anywhere." Another member, on the other hand, said, "I do not have access to reliable internet from my home and must conduct the course at work."

Other members stated that they had issues with connectivity while trying to do their DL in the office. One member said that "the servers themselves need desperately to be updated. The system struggles greatly with large courses." Another member commented that the "intranet at work is dead slow." Another agreed with the latency problem and said that "most of us are doing these at work online and the DLN can be extremely slow." Another member commented that "the system struggles with uptime." These issues, a member stated, "often result in complete loss of connection" and that sometimes the system, "does not save the work that was already completed."

Usability of technologies supporting DL. The second category within this theme contained members' comments regarding the usability of the technologies supporting DL. This category included items such as the members' comfort level with the DL technology, DL technology support available (including from a help desk), members' use of external technology to support their course, and issues encountered such as difficulties with the DND search engine, inactivity time-outs, and the inability to print courseware.

Regarding members' comfort levels with the use of DL technology, there was a range of responses. Many members stated that they were "very comfortable." Another stated that as the years went on, his satisfaction grew because, amongst other reasons, he "became more comfortable with the distance learning format." Another said, "Although I am older, my computer skills and comfort level with software systems are good. I never had any issues with that part of the DL."

On the other hand, one stated that, “regardless of age, not everyone is computer savvy (i.e. a digital native). There needs to be training available that is aimed at every type of learner.” Another also showed less comfort and stated, “As an older member of the CAF, the greatest beginning difficulty was the technology of the computers and navigation of a DL course. As the course went on, it was slightly easier by the end.”

The topic of technological support, mainly mentioned in terms of a help desk, had a range of responses. On the positive side, one Senior NCM stated that “there were glitches in the system, but they were quick to fix them and rectify them.” On the other hand, one member said, “service/aide technique non adéquate [inadequate service / technical support]” and another member stated that “having no technical support that is easily accessible to every member in a timely manner makes it hard to trust the quality of learning being produced by the system.”

Several members commented on the use of external to DND technologies being used for DL, either as part of a course or on the side. One mentioned that YouTube videos were being used by professors as, “it was an easier platform to get the message across.” Another mentioned the use of online chat pages being used between students as an aside to a DL course on the DLN. A couple of members mentioned incompatibility issues for users of Apple products. One mentioned that, for these users, the members are required to purchase Microsoft Office and that “these should be provided.”

A few other issues were brought up in terms of usability. Several members reported difficulties with the DND search engine, and one member stated that it “was of no use when trying to find reference material.” Another suggested that the DND/CAF should “invest in upgrading the DND/DWAN to have better browsers and access for research.” Inactivity time-outs in the LMS seemed to cause frustration for several members. One member stated that

"sometimes timeouts occur before work is completed." One recommended that DND/CAF "increase the length of time members can be inactive when online prior to being pushed off the network."

Numerous members mentioned the desire to print out courseware but were unable. The practice of taking screenshots during DL courses to retain material was brought up by several members. One CAFJOD program graduate stated, "I would very much like to be able to download the slides and retain them so I don't have to screenshot all the time." Another CAFJOD graduate stated that in "the new DL you are not able to download the content to read the materiel on your own when you can." A third CAFJOD graduate recommended a "clean, searchable PDF copy of each course." "In the absence of such," he observed, "a considerable amount of time is spent making notes on what is content clearly available." One member stated his preference for a paper version of the course as, in his view, DL is just a way to "burn out your retinas." Another recommended that the schools, "provide the reading material rather than having the candidate do their own printing."

Learning management systems. The third category within this theme contains member input regarding the courses' LMS. There are two main LMSs used in the CAF: 1) the DLN, which is considered the enterprise LMS and is on a Saba platform; and 2) Moodle, which is the platform used by the Royal Military College of Canada (RMCC) and the Canadian Forces College (CFC). Of the courses/programs explored in this research, the CAFJOD program, as well as all the NCMPD courses, use the DLN/Saba LMS. The JCSP DL program uses the Moodle platform for their forum discussions and for sharing many of the course materials with students.

One Junior Officer who was interviewed stated that the DLN is "easy to use," "very user-friendly," and that "anybody could do it." Other members felt that the DLN, however, left some

things to be desired. One Senior NCM that I interviewed about their SLP experience, for example, stated that the LMS affected the interactions between students in their forum discussions. They stated that "because of the software of DLN… it wasn't a flow," adding that "it wasn't very intuitive or well laid out... it was very cumbersome." Another member stated that the DLN "is a very difficult program to work with… navigating the DLN is terrible and something needs to be changed…. It… creates needless frustration." Another stated that it creates "stress for no reason trying to navigate it." Another member commented that the "DLN is very clunky and difficult to find courses and is not very user friendly." A Senior Officer, that had completed the JCSP DL, said of the LMS used by CFC, "it was okay, I guess. I've seen better, but I've seen worse."

One ALP graduate stated that the "quality of the website and technology is still lacking." Another said, "I would complete more DL courses if the system was easier to work with. The catalogue isn't user friendly, because the names aren't straight fwd." Some members gave some recommendations regarding the LMS in the CAF. One Senior NCM suggested, "improving the platform to enable students who are working on that theory portion of the DL so they can actually collaboratively work together if that's what's required. So be it from smartphones, from tablets, from work, travelling on the train, travelling in a car, whatever." A Senior NCM who had completed the SLP on the DLN recommended that "Moodle or a Moodle-like (more learner friendly) platform should be explored."

Perceptions regarding DL technologies in the CAF. The final category within this theme contained members' perceptions regarding DL technologies including general levels of satisfaction and expressions of frustration. Comments regarding satisfaction, overall, with DL technology in the CAF showed a wide range of feelings. One member said the "technology was

decent," another stated that "as a whole I think that it is getting better," and yet another commented that "the technology was sufficient to support the course." Some expressions of frustration with the technology were also shared. One ILP graduate stated, for example, that "the technical hiccups were very distracting and at times infuriating."

Theme 3: Issues of DL Course Quality

The third theme that emerged from the thematic content analysis was titled, "Issues of DL Course Quality." 18 codes were formed into the four following categories within this theme, as illustrated in Figure 29 below: 1) Interactions; 2) Course content and resources; 3) Course design; and 4) Course logistics.

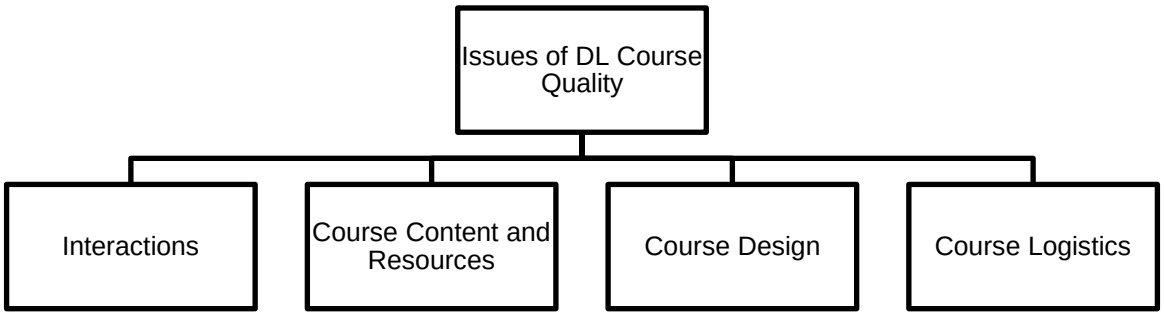

Figure 29. Theme 3: Issues of DL course quality.

Interactions. The first category within this theme contained members' comments and perspectives regarding interactions. This included interactions with peers, including comments about networking, interactions with instructors and staff, as well as interactions with the course content. As identified in numerous studies in the literature review (Aman, 2009; Cole, Shelley, and Swatz, 2014), interactions can influence learner satisfaction in a course. The quality of interaction came up often in members' responses to DL satisfaction, with many reporting that they felt that they were missing out on what they perceived as rich face-to-face opportunities to

meet, discuss and create relationships with their peers that would benefit them throughout their career.

Some members felt that the online forum discussions were valuable for effective interactions with peers. One, for example, said that "they were excellent. Part of it is because you're forced to interact." One member said, "getting in contact online with people like that you meet a lot of people so I think it's good." Another member said that the connections with the other students were great and stated that they would stay in contact with their classmates. One member said that they liked that they could contribute to a discussion at any time, day or night. In an interview, one Senior NCM offered his perspective on a positive aspect of interactions in DL:

> One of the things that distance learning will enable, when we're looking at group discussion kind of formats, is typically when you get people physically in a room, group dynamics always take over. You're going to have one or two people that will naturally take charge of the room, you'll have one or two people who won't say a word even if you come around and poke them with a pen and then you get the fence-sitters who can go either way. In the virtual chat room everyone has a voice and they're not afraid to express opinions."

Other members, however, found the value of the DL interactions compared negatively to in-class peer interaction. Some stated that students were often just posting the bare minimum to meet the course requirements and that the forum discussions were not engaging. Many stated that they felt that they would learn more in an in-class situation rather than, as one member put it, from "the cold face of a screen." One ILP graduate said that he found himself "unable to fully engage with other participants." Another stated that the DL experience, "isolated the users and did not really allow for positive discussions amongst our peers." One SLP graduate stated that

“for leadership and command courses nothing [referring to DL] beats face time and learning from others, 'Friday night in the shacks learning over beers with peers.'” Another stated that “it’s easier to appreciate other experiences when soldiers are assembled in one location.” One ILP graduate stated, in reference to DL, that “there is no human component, experience, lessons learned. There is no feeling of camaraderie, team building etc.” One ILP graduate stated that “the over reliance of computers has taken the "human" interaction away from most courses. The "tech net" used to be formed when sitting in a class with peers from different areas.” Another stated that a negative impact of DL, beyond the immediate training, is the “general group mentorship by rank or trade.” Another member stated that DL does not improve our people skills and “leads to more people ‘leading by email.’” Several of the JCSP graduates shared that they felt the online forums were more effective after the cohort met face to face during the residential visit halfway through the DL course. Some also felt that, following the program, the students from the residential version of the JCSP seem “to have a greater network of peers and mentors than DL students.”

Some members found that discussions in DL forums were lacking in depth as it was, as one member put it, “difficult to gauge an individual's perspective without being able to read body language and identify tone.” Another mused that “you don't get the facial expressions, you don't get the gestures, you don't get the intonations.” As one member described, “some things come across as very pointed where they're not intended to be.” Another member explained that “text and narrative can be taken out of context and read in many different ways,” and yet another member said that “it's hard to bring emotion into a conversation through a computer screen or through an online chat forum.”

The CAFJOD program and the PLQ do not incorporate any peer interaction in the course design. A Junior Officer who had completed the CAFJOD program stated that it was "a solo endeavour." Although he said that discussions with peers, outside of the courses, were encouraged, you "have to sit down and do the course all by yourself." A graduate of the PLQ course suggested that DL courses "need to be a little bit more interactive." When I asked him to explain what "more interactive" would be like, he replied with examples such as, "being able to talk to other students," and "more networking and bouncing ideas and having to work together." He also reflected that "maybe through other people you can actually learn the information a little bit better yourself." When asked if any of this type of interactivity was seen in his PLQ, he stated, "None. There was zero."

Some ALP graduates shared their disappointment that there is no longer a residential portion of the ALP in that it is presently delivered solely via DL. One ALP graduate stated, "I am extremely dissatisfied with the DL package. It does not foster networking, nor does it allow us to broaden our experience with other trades." Another member stated that "ALP should have a small portion by DL and bring back the residential portion since that is where your networking is establish[ed] which you cannot have online. The face-to-face interaction is definitely necessary."

Interactions with instructors were also seen as an important issue in members' discussions regarding their satisfaction with their DL experiences. There was a range of levels of satisfaction with instructor interactions. Some said that they communicated with instructors through the messages and online forum discussions on the DLN/LMS, some via email, and some communicated on the telephone. One member said that they found the interactions with

instructors to be “adequate,” and another said “effective.” One Senior NCM that I interviewed, who had completed the SLP, stated that the course staff were “always there to help.”

On the other hand, some members felt that the interactions with their instructors and staff left something to be desired. The interaction, one member stated, was “effective but very brief and not necessarily personable.” In terms of feedback, one PLQ graduate hinted at his displeasure saying that it should be made “mandatory for instructors to respond within a given time period.” A Senior NCM stated, in reference to the interactions with instructors, that he was “not overly satisfied… it was more process management than people management.” He suggested this could be improved by “more feedback on how we're communicating, more feedback on things that we're doing, greater interactive sessions.” In terms of the online discussions, another member stated that “the instructors could have been involved. They could have actually chimed in, they could have given some feedback directly in the middle of conversations, they could have redirected conversations or opened up the conversations much more” and that this probably would have, “elicited a little more.”

A Junior Officer who had completed the CAFJOD program explained that “there's no instructors on CAFJOD” and that the course is, “entirely self-serve.” He stated that any questions a student may have were to be directed to the Chain of Command.

As for interactions with the course content, members reported that, depending on the different courses, they accessed the content in different ways, such as the following: on the LMS: by downloading PDFs or accessing content through provided links and electronic libraries, both from internal and external sources; and, in some cases, through content and references that were either mailed or emailed. One member said that there were “phenomenal resources” that were

"easy-to-access." A JCSP graduate stated that "the content as provided was easily accessible, you could get it, you could read it."

Course content and resources. The second category within this theme related to the content as it contained members' comments and perspectives regarding the course content and resources of the CAF professional development courses. This category also included references that were provided by the school and accessed exterior to the school and comments about the perceived value of the course content by the members.

There was a range of comments and satisfaction levels regarding the courseware. Some members mentioned that sometimes the content was outdated and, as one CAFJOD graduate mentioned, occasionally "references were made to documents/policies that have been amended." One JCSP graduate stated the importance of making sure that what is "presented is actually the most current reference," and that on their course, "there might have been a place or two" where they thought, "this [content] has really been overtaken by events, there's new rules out there." "Some stuff was pretty dry," a SLP graduate stated, "but some stuff was interesting." One ALP graduate stated that the "course content is a massive dissatisfying factor during leadership courses." The impression about the courseware from another Senior NCM who had completed the ILP, however, was that the schools were "always trying to… tweak it to get a little bit better or a little bit more up-to-date and relevant if information changes."

The additional resources provided to students were often appreciated. A Junior Officer who had completed the CAFJOD program liked that he was left with an "invaluable toolbox" that included a package of references, examples, and templates such as for writing a memorandum or a briefing note. A Senior Officer mentioned a military writing guide that had been provided to the students and several JCSP graduates mentioned their access to an online

library. Additional references were sometimes provided to students to amplify the topics. One member shared, “I remember emailing instructors looking for specific stuff and they would send some suggestions or some PDFs or other things to consider.” One JCSP graduate stated that “the directing staff would find other articles and send them out as kind of bonus learning.” Some students reported that they had also used some sources for references that were external to the school such as the National Defence Headquarters (NDHQ) library, the DND Intranet for different CAF policies, Google Scholar, online libraries that they had access to for their other education pursuits, and a NATO library at a base external to Canada.

Different members expressed their perceptions regarding the course content value. There were many positive comments regarding the course content and some members offered their recommendations on how to improve it. One SLP graduate with 34 years of service in the CAF stated positively that “I've done many jobs within the CAF from, boots on the ground, several NATO deployments, office jobs, overseas, and each training course I go through makes me that much better at what I do.” Another member found the content was, “somewhat relevant and interesting” and another, “very helpful and worth doing.” One member stated that, regarding the course content topic of leadership and command, “anything you can learn about that to me is a very big positive.” One SLP graduate shared that he found that the course content and topics covered were interesting and included, “stuff that I kinda had lived through being in the CF”, such as “the whole Somalia inquiry,” different CAF missions, and “how things have evolved over time.”

One Senior NCM, when questioned about the readings of the course content, stated that he believes we could “ratchet up a level of expectations beginning with the ILP, ALP and SLP,” and that there is “so much more that those courses could and didn't deliver.” “I think we need to raise

the bar," he stated. He went on to explain that we must increase the breadth of experiences, both educational and work-related, and then "bring those skills together" on the ILP, ALP and SLP if we are to produce Chief Warrant Officers capable of critical and analytical thinking and of "creating vision."

Course design. The third category within this theme contained member input regarding the design of the course/program. Some of the items within this category included references to the students' perceived quality of the DL course design, including learning objectives, methods of instruction, and assessments, including the opportunities and use of formative and summative feedback. Structure and navigational aspects of the DL course were also included in this category.

There was a wide range of perceptions shared concerning the quality of course design, with some members feeling very positive about the design of the course and others feeling more negative. On the positive side, one member stated that "the quality of DL courses has improved significantly over the last few years." A JCSP graduate stated, "I think the JCSP program is high quality" and that he found the quality comparable to other DL courses that he had taken in civilian universities. Another JCSP DL graduate said that the training had been "top notch." A graduate of the CAFJOD program described the courses as "pretty good," "not boring" and that the program kept him "engaged throughout the whole program." He described the "annoying" "cartoon soldiers" that appeared in the courses peppering "really bad jokes" throughout. While some other colleagues seemed to dislike this aspect of the design, this Junior Officer shared that "I actually remembered the material better because I associated the material I was learning with these extremely bad jokes."

Some members, on the other hand said that they wished the DL would be more interactive. Regarding the DL portion of his course, one PLQ graduate stated, “I'd say it was effective. Whether it was the best way to get it across is debatable.” He explained that he found the course just a lot of “death by PowerPoint.” One member stated there seems to be a “struggle to translate traditional methods of delivery into DL.” Another member stated that “I find on some DL you just read and read for 8 hours straight and at the end of the day you retain very little.” Other negative comments included, “delivering substandard training one click at a time,” “haphazardly put together,” “DL without proper instructional design” and that the course mechanisms are just set up to give “people a DL course where they can click next slide, next slide, next slide, next slide.” One ALP graduate stated that he found the course, “NOT a true online learning experience; just PowerPoints with remote access.” A JCSP DL graduate stated that “JCSP DL is a poor representation of what DL offers. They have simply taken the classroom activities for a week and spread it out for a month.”

Most members felt that they were provided clear learning objectives at the beginning of their courses. Comments included that the objectives were “pretty well spelled out,” and “very clear.” One Senior Officer stated that “the JCSP course, in particular, was very well laid out,” and that even before the courses start, “you understand the objectives… as you enter every course you get the rubric for the course, you know exactly what you're being taught, being assessed on.”

Regarding methods of instruction, many different members stated that there was too much reading required and that they would have liked more interaction built into the course. One member stated that he would have liked to interact with other members via teleconference or videoconference. One SAP graduate offered the following recommendations:

> "DL needs to evolve and become more than an online repository of Power Point Presentations. Narration and graphics go a long way to holding a student's attention and getting the message across. Important messages from Senior Leaders and other Subject Matter Experts in the form of short videos would also be beneficial and ensure that the message received is the message intended."

Regarding assessments and feedback, there was a range of comments shared. Some members expressed dislike for DL quizzes, and one member stated that it was annoying how they "purposely try to trick you into the wrong response." Another said that learning should be tested with "realistic tests that don't try to waste our time double/triple thinking the wording of the question." One Senior NCM made a good point about ensuring assessments are appropriate to the performance objective. He pointed out that an "administrative assessment is very different from a leadership assessment," and that we must be cognisant that "how you write doesn't actually define how you lead."

The quality of feedback from assessments was described with words such as "good," "relevant," "constructive," and "appropriate." One member stated that it was "very detailed sometimes and other times it absolutely depended on the instructor." It was also described as "subjective" by one member and another member said that it was "limited." "We went through the process," one stated, and "once the process was done, we got the result and moved on." Another member stated that "instructors do not always know how to give constructive feedback and instead give out "copy and paste" feedback." One member stated that more feedback would be an improvement. His description of the present state of feedback sounded very formulaic in the following statement, "here's what you're required, here's what you did, thank you very much, here's the result."

The actual structure of the course and the ability to navigate within the course were topics of dissatisfaction that some members raised. One member stated that the navigation to the course material is often "unclear" and others shared their frustration that there are often changes as to where they can find the required courses and materials. One ILP graduate stated that "it seems that as soon as I figure out the new layout of where courses and info are located… it gets messed with."

Course logistics. The final category within this theme contained members' comments regarding the course logistics of CAF DL courses. This included comments about school capacity affecting DL, course loading, scheduling, and qualification management.

Several members brought up a lack of capacity in the schools to load all the students who require the NCMPD courses. In fact, one Senior NCM reported that some members had been required to repeat their DL portion of the PLQ as the time between the DL and residential portions of the courses was too long, due to a lack of school capacity to load them on the in-house portion or due to changes in the course since the DL portion had been completed. This, evidently, led to great frustration. "The capacity at schools and instructors," he reiterated, "have been cut back for years."

Regarding course loading and scheduling, members generally stated that they wished that there was more flexibility. One CAFJOD graduate said that the scheduling of the CAFJODs was "sporadic" and this "coupled with the notion that some serials can be max-loaded and therefore doubly unavailable to the student, causes significant delays in completing the training." Another stated that "some crses [courses] are only available at certain times of the year. If your schedule does not work with those times, then the training gets pushed to the right." One CAFJOD graduate stated that the, "time in advance to register… can conflict with those pers [personnel]

who don't know where they will be two months in the future." A Senior NCM stated that "it took far too long to be loaded on the ALP after I had my trade promotion course."

Regarding qualification management, some members mentioned that they had some difficulties printing certificates from the DLN for their course completions. Additionally, one CAFJOD graduate questioned why the course completion did not automatically update their Member Personnel Record Resume (MPRR) and that it was not immediately clear how to obtain the official national qualification after finishing the program.

This theme concerning issues of DL course quality included the categories of interactions, including to peers, instructors, and content; course content and resources; course design; and course logistics. CAF members who responded to the questionnaire and participated in the interviews provided rich comments and examples to illustrate their satisfaction and dissatisfaction with different elements within this theme.

Theme 4: Military-Specific Considerations Affecting DL Experiences

The fourth theme that emerged from the thematic content analysis was titled, "Military-Specific Considerations Affecting DL Experiences." As an introduction to this theme, a frequency coding analysis was completed on the open-ended question response to question 8 of the questionnaire (Appendix A). In reference to military-specific considerations (e.g., operations, postings, etc.), the question asked, "Have these factors had any effect on your satisfaction or dissatisfaction with any of your CAF DL experiences?" With a simple coding scheme including: 1) yes; 2) no; and 3) somewhat, with more fulsome and descriptive comments being generalized within one of these three categories, 176 references were coded. Of these, 104 references were coded as "yes", 64 references were coded as "no," and 8 references were coded as "somewhat." Although not every participant of the survey responded to this question and

some participants answered this question as N/A, generally speaking, more participants believed that military-specific considerations influenced their DL satisfaction in some way.

For this theme, 14 codes were formed into the five following categories, as illustrated in Figure 30 below: 1) Operational activities; 2) Military work factors; 3) Juggling DL with other military-specific responsibilities; 4) Postings; and 5) Military career considerations.

Figure 30. Theme 4: Military specific considerations affecting DL experiences.

Operational activities. The first category within this theme contained members' input and personal experiences, about the use of DL during operational activities. Some of these activities included deployments on operations, military exercises, mission training and working in a high readiness state for deployment. Deployments on operations, many members stated, often cause difficulties with DL studies as they take members away from their normal schedule. "Certainly," one member stated, "if you are on DL and there's taskings, deployments, whatever, forest fires, anything that can grab you away from work, that will impact your DL experience." Many members praised DL as a delivery mode that enables the continuation of professional development during operations. One member asserted that "it's possible to continue to engage in the learning process while deployed - if the technology supports it." Another stated that "DL is a viable option in various circumstances, such as while on a mission or deployed out of the country." Another member stated that whether "we're looking at deployments, postings,

exercises, high readiness plans… DL enables the learning process to continue through all of it." Another member, however, shared that "some of my classmates had to withdraw due to deployments." Multiple challenges with DL in deployed operations were found in this research including the difficulties focusing on DL in these often busy and stressful situations, difficulties attaining the use of required equipment and accessibility, including issues with connectivity and sufficient bandwidth in military deployed situations.

Several members mentioned the challenges with focusing on DL in an operational setting. In reference to DL in operations, one Senior NCM said, "understanding that when you're in operations and deployments, the environments, the stresses, and the factors of where you are already keep you quite busy." One Junior Officer who had completed the CAFJOD program while aboard a ship stated that it was "virtually impossible" to complete the courses in a timely manner, "mainly due to inflexible work schedules (watch-keeping)." Another member mentioned that "deployed operations present a challenge in focussing on the material at times." Another stated that "I did the ILP DL while in Afghanistan. Super busy and dangerous time. Could not focus on the crse [course] as much as needed."

Accessing the required equipment was sometimes a challenge that members faced on operations. One member stated that "at sea, DL is very hard to complete, as there are few available computers that are shared between multiple users, and operational requirements have priority over individual training." One Senior NCM made the pertinent comment that the availability of equipment during training and extended deployments is often dependent on the type of work a member is doing. He stated that "…pour les armes de combat, notre travail est principalement concentré sur le travail manuel et de gestion de personnel. L'accès à un poste

informatique est difficile […for combat arms, our work is mainly focused on manual work and personnel management. Access to a computer station is difficult]."

The most common challenges that many members brought up regarding military operations were issues of connectivity and bandwidth. While one CAFJOD graduate said he completed three courses while deployed to Afghanistan and, "only on the odd occasion ran into any connectivity difficulties," others reported more challenges in this respect. Some members stated that they had dropped DL courses due to connectivity and bandwidth issues on operations. Another mentioned the difficulty accessing good internet connections while on humanitarian relief operations, such as with the Disaster Assistance Response Team (DART).

"Restricted bandwidth while sailing," one member stated, "can significantly reduce, or stop, DL progress." One ILP graduate stated that "connectivity while at sea was a big problem… There was also the constant risk that you would lose connectivity altogether and lose your work." Another stated that "if you're deployed to Africa or something like that, who knows what kind of connection you would actually have to be able to progress it." Another member stated that "HMC Ship's IT software and/or connectivity has created a lot of headaches for students." One CAFJOD graduate stated that "bandwidth is often severely restricted, making newer DL hard to access." One member stated that there was a submariner on her SLP course and that due to being on a submarine, "he could only participate when… surfaced, and even then…there is no real interaction."

A couple of sailors even mentioned that members are using time in foreign ports to fulfil their DL commitments. One Senior NCM stated that "once I was deployed onboard ship the internet wasn't very good and [so I] had to do extra work before and download info at a café once we docked in another port. Not ideal." Another stated that "students spend personal time in

foreign ports downloading and uploading assignments," and that, due to this fact, "their quality of life goes way down."

Military exercises, mission preparation training and high readiness states can also cause unique challenges to members pursuing professional development via DL. One ILP graduate remarked that, during major exercises, it is "hard to write and send essays while living off a tank." Being in the field can often cause accessibility issues. One JCSP DL graduate stated that he was required to participate in mandatory field exercises during his studies. In reference to a lack of course flexibility and connectivity while on exercise, he described the scenario he faced. "Imagine", he shared, "having to leave the field, go find a Tim Hortons for their Wi-Fi and have to submit content iaw [in accordance with] an arbitrary and completely inflexible timetable. Ridiculous." Another mentioned that members sometimes "use their BlackBerry [work cellular phone] to send essays" in the field. Another member shared that "trying to send in your last few assignments in the middle of the field in WX [Wainwright Exercise] will most definitely leave a bad taste in your mouth." Another member stated that "conducting DL while on exercise was extremely difficult and led to considerable corner cutting, reducing the quality of the learning." Others mentioned how military activities during DL led to more stress, more difficulties finding time to dedicate to DL and meeting course deadlines.

Military work factors. The second category within this theme contained members' comments and perspectives regarding conducting DL in relation to military work factors. Some of these factors include situations such as a "high ops [operations] tempo" / heavy workload, DL while traveling for work, and working across time zones where other students and instructors are in other locations across or outside the country.

Many members mentioned high ops tempo or heavy workload as a military-specific factor that affected DL experiences. "The tempo of regimental life does not slow down or stop to permit DL," one member said. Another stated that being "posted in a high-range or demanding job while conducting the DL is ill advised." A JCSP graduate stated that "trying to complete a two-year DL course while managing a full-time, high intensity job is not sustainable." An SAP graduate stated, "I am one of one in the office. My responsibilities/tasks cannot be easily downloaded to someone else… There is just too much to do and not enough people." Another stated that "an extremely busy job with high ops tempo significantly, and negatively, impacted my DL experience."

Traveling for work, also known as temporary duty (TD) in the military, can create some challenges for DL. On one side, DL facilitates the continuation of professional development while travelling. As one Senior NCM stated, "I spend a great deal of my time on the road. I can bring my tablet, DVPNI [Defence Virtual Private Network Infrastructure], put in a rocket stick, and I can access the DLN." Others, however, saw travelling for work as a potential impediment to their progress. One member said that TD, "added significant challenges in meeting the timelines," and that, sometimes, TD led to internet and computer access issues. As one JCSP DL graduate shared, he "was frequently away from home and office for work and it took approximately 2 months to obtain access to a mobile computer to work on DL assignments while on TDs. Some TDs do not allow for work to be completed, and with CJOC [Canadian Joint Operations Command], there were frequent short notice events that could not be planned for."

Differing time zones between students and instructors can also affect DL experiences, particularly in the military where members are posted across Canada and often posted or deployed for a period outside of the country. An SLP graduate stated, in reference to being

deployed, that “les décalage horaire cause de sérieux problem [time zones cause serious problems].” Members mentioned this topic in reference to working in groups and participating in forums. One member stated that “trying to coordinate with other syndicate members” was difficult due to time zone differences. Another mentioned the challenge of “trying to accommodate schedules for group discussions as they are typically based on Eastern Standard Time (sometimes late in the evening or early morning).” An SLP graduate shared that “for some sessions while overseas, I was required to be online at 0330 hrs to meet with the other classmates. This makes my primary job/duties difficult at times.” One member had a posting outside of Canada (known as OUTCAN) and always had to deal with a six-hour time difference with the instructors. One ALP graduate recommended the addition of “more instructors at more times to accommodate varied time zones.”

Juggling DL with other military-specific responsibilities. The third category within this theme contained member input regarding the need for military members to juggle their DL with their other military-specific obligations. This included various personal examples of members with conflicting responsibilities and where either the military members’ position provided latitude to the member or the course staff granted flexibility, such as the extension of deadlines, due to conflicting military responsibilities.

As mentioned in the earlier section, many members stated that they had a heavy workload that they juggled to accomplish the course objectives of their DL courses. Members in this category shared specific issues in juggling their various responsibilities. For example, one member shared, “I was in a high-profile job and was very busy, as well, I was away for half the course as a member of a Board of Inquiry for an aircraft accident.” Another shared, “I fill a busy position and was expected to complete the activities on my own time despite attending other

courses at the same time (constantly in my career) and going on taskings and deployments." Another stated that "while deployed on operations my DL course was a lower priority than work, exercises or operational requirements." One mentioned the difficulties in juggling the CAFJODS with their workplace schedule. "The lack of availability outside arbitrary sessions was frustrating as it did not align with operational unit tempo," he shared. Some members said that they were routinely pulled away from their DL studies due to taskings, unit recalls, and to meet other work deadlines, such as writing and submitting annual Personnel Evaluation Reports (PERs) for their subordinates.

One SLP graduate saw the positive side to this need to juggle military responsibilities. He stated that while, "it can be difficult at times to balance our professional/personal responsibilities…. this can also be seen as a "growth" opportunity to push individual time-management boundaries."

Despite the requirement to often juggle conflicting military priorities, many members stated that they appreciated the flexibility from the schools and that the staff were accommodating with regards to deadline extensions when needed. Members stated that "if you needed more time you could always talk to the staff," who were "pretty lenient," and that "there was always a solution." One CAF member stated that "la flexibilité avec laquelle s'est adapté le tuteur ou enseignant attitré m'a aidé grandement dans mon cheminement [the flexibility the tutor or teacher showed helped me greatly in my journey]."

Several members, however, did comment on some inflexibility from the staff. One member stated that "there was little to no accommodation or even understanding from instructors about our full-time military jobs." Another stated that the timings were "utterly inflexible."

One JCSP graduate made an interesting comment that could perhaps shed some light on an aspect of military mindset with regards to asking for help when needed. He stated that "it is left up to you to ask the professor for leniency (something I'm sure they'd grant as they are quite accommodating but something that military members are reluctant to do because it is like admitting weakness or failure). We are all driven to succeed and asking for leniency feels like failure."

Some members stated that, due to their military position, they were able to enjoy some latitude in their schedules to help them complete their DL. One member stated, "I was given tasks, but it was up to me to manage how to do them - this afforded me the flexibility I needed to manage my workload as well as DL." Another found that "in an office environment, there is often less urgent work, allowing for more time to complete DL during working hours." Another member said that "my job was highly independent, which provided me with the latitude to manage my work/study time/ratio." Another member shared how being on operation provided him some additional focused time for his DL. He shared that "on each tour to Afghanistan I was able to complete OPME's [Officer Professional Military Education – a previous program to the CAFJODs] as I had nothing to do in the evenings… which helped the time go by for the mission."

Postings. The fourth category within this theme contained members' perceptions and real-life stories regarding the effects of a posting on the DL experiences. This category included both domestic postings and postings to locations outside of Canada, known as OUTCAN postings. As military members normally experience numerous postings to different cities, and sometimes even other countries during their careers, postings can be a challenge to their DL efforts. OUTCAN postings can create all the same challenges as postings within the country, but often with the

additional challenges of larger time zone differences, more complex logistical challenges in the move and potentially non-Canadian workplace supervisors who are not familiar with the requirements of the programs.

One JCSP graduate, for example, stated that a posting during DL, “caused significant issues as I was expected to maintain my course work while searching for a house, travelling and ultimately moving.” Another JCSP graduate stated that he found it was, “very difficult to manage a move, complete all of the admin, prepare the house for a move while still doing DL.”

One member mentioned that they had to defer a DL course due to a posting. Another JCSP graduate stated that the lack of time available due to a posting and ongoing DL affected his choice of residence on posting. “I was posted during my last year of DL and I simply could not find the time to look for a home to purchase and took the "easy" way out and rented a PMQ [Private Military Quarters – military housing] - something that I would not have considered if not doing DL.”

An SLP graduate stated that “postings and having to learn a new job, place high demands on members when coupled with DL. This increases the stress level experienced and takes away from the material being learned.” Another Senior NCM shared his opinion that “trying to complete DL assignment during the middle of a move is less then favourable.”

Military career considerations. The final category within this theme contained members’ perceptions regarding military-specific career considerations in relation to DL courses. Within this category, codes regarding promotions and other conflicting career courses were included. The DL courses focused on for this research are often a requirement for a member’s promotion, and as such, were sometimes referred to in this light. Regarding the JCSP DL, there was much discussion regarding the advantages and disadvantages of the DL versus the residential course.

There was a sense that the residential course allows for more networking with peers and that this aspect would further one's career.

There were also some comments regarding additional merit points on promotion boards being awarded, or that should be awarded, based on the additional workload that a JCSP DL student takes on, i.e. a full workload and their DL studies. One JCSP graduate said that it "shows that we are more dynamic and capable," and we, "should get points for it." Some of the NCMPD course graduates shared their beliefs that the professional development courses should not be required to be substantively promoted. One member said that "several soldiers released prior to the ALP and were reverted back in rank because of the lack of an ALP." He added that, "this is complete rubbish."

Some members mentioned that at times there were conflicting career courses and other required training. For example, one member stated, "I have had to complete DL while being a student on another course." Another said that other "training often delays members from being course loaded on DL courses." A Junior Officer, who had completed the CAFJOD program, shared that "somebody might be on a waiting list for a course and suddenly -oh, you're going tomorrow. And it's a career course. They only got it confirmed very, very late in the game and they want to get it, so they are going to take that, so that takes precedence [over the DL professional development course]."

In this theme, military-specific considerations were discussed that can affect the military members' DL experience. Military life has many unique aspects that can make DL more challenging, as have been shown here.

Theme 5: Members' Views on Present and Preferred Future Use of DL in the CAF

The fifth theme that emerged from the thematic content analysis was titled "Members' Views on Present and Preferred Future Use of DL in the CAF." A total of 26 codes were formed into the following four categories within this theme, as illustrated in Figure 31 below: 1) Suggestions for improvement of CAF DL; 2) Comparisons between modes of delivery; 3) Benefits of a mode of delivery; and 4) Present perceptions about DL in the CAF.

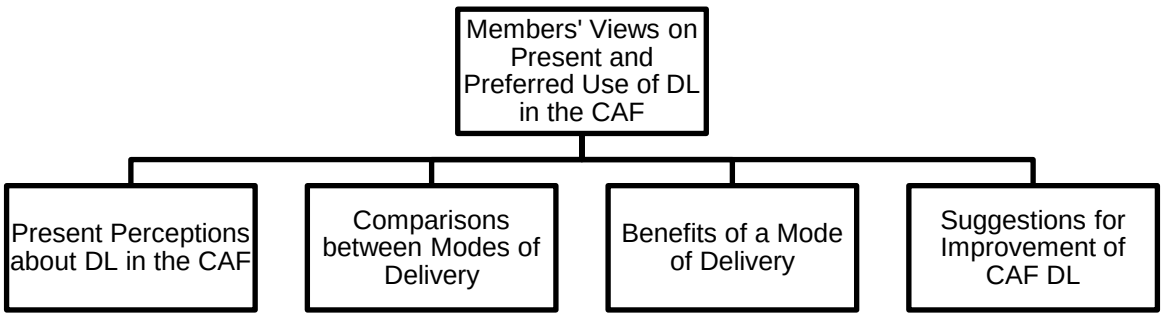

Figure 31. Theme 5: Members' perceptions on present and preferred future use of DL in the CAF.

Present perceptions about DL in the CAF. The first category within this theme contained members' present perceptions about DL in the CAF. This included comments regarding the members' levels of satisfaction and their feelings about the direction the CAF is presently taking towards the use of DL. It also included more specific perception items such as comments and beliefs regarding the culture of DL in the CAF, issues related to generational considerations and learning styles in relation to DL, as well as issues regarding students' academic misconduct during DL courses. Numerous members also compared the CAF's present offerings of DL to other external programs.

There was a wide variety of responses regarding overall satisfaction with DL. In the interviews, this was one of the first questions I asked after priming members' memories by asking them to tell me which DL courses they had taken in the CAF. Regarding overall

satisfaction, some members responded with a number out of 10. A Senior NCM spoke positively about his experience and, in rating his overall experience, stated, "I would say about 9 anyway." An Officer Cadet, who had completed the PLQ as a Junior NCM, rated his experiences as "6, 7 out of 10." A Senior Officer shared that "on a scale of 1 to 10, 5." General comments regarding CAF DL satisfaction, ranging from positive comments to more negative sentiments included, "best learning experience," "various degrees of positive," "globally it's great," "pretty good," "pleased," "quite favourable," "satisfied," "fine," "mixed emotions," "strongly dislike," and "painful to get through." One member even stated, "I cannot convey the depth of my dissatisfaction."

Many members shared their perceptions concerning the direction the CAF was taking with the use of DL. Some members were not sure and asked me, in the interviews, what direction the CAF was heading with DL. Generally, I found that those members who were positive about their DL experiences felt that the CAF was moving in a good direction increasing the use of DL and improving upon current offerings. Some of the comments included that the CAF was making "incredible strides," and that "it's a great way to go." One member said he was "impressed that we are going this way," and yet another stated that "the CAF should continue to move in the way they are." Additional positive comments included that "DL is a vital tool in contemporary learning and the CAF should continue to embrace it" and that "DL is a great capability that should be explored and leveraged as much as possible."

On the other hand, members who were more negative about their DL experiences shared that they believed the CAF was relying too heavily on the use of DL and should minimise its use. Often members made the comment that we need to ensure that we are choosing the right balance between the use of DL and classroom. One Senior NCM stated that "we're starting to do too

much by DL, simply because there's a cost savings factor." An ALP graduate suggested that the CAF should, "arrêter d'augmenter le nombre de cours donner en AD [stop increasing the number of courses given by DL]." Another member stated, "I'm just concerned that we put too many eggs in the same basket there for the DL," and yet another member, a JCSP graduate, stated that "the CAF needs to stop 'pushing the easy button' on DL courses in general."

Some statements seemed to be CAF- or military-specific cultural perceptions regarding DL. Although these quotes represent individual beliefs, they seemed worthy for inclusion and consideration. One CAFJOD graduate stated that operations and workload must take priority and that professional development courses are, "known as selfish career climbing initiatives." An SAP graduate stated that "if a course is taught by a person or in class it is assumed that the lesson is important. When course materials are covered by DL, the mentality is that 'it's the less important stuff.'" One PLQ graduate shared his opinion that, "In my mind, there's no room for DL in the Army. It's been my experience that most folks didn't join the army because they were academics. DL courses are designed for academic oriented people, not for the typical blue collar."

Regarding members using work time for DL, some members shared their perceptions that it would be seen negatively if they were to take this time. One member stated that they did all the DL on their own time due to, "not wanting to be judged for taking time off." A CAFJOD graduate said that supervisors say that "professional development through courses, especially DL, are a "personal responsibility" and should "not take work time" to complete them."

Some members shared their perceptions regarding DL in relation to generational considerations. Some members shared a perception that DL was less favourable for older members and more favourable for younger members. Some members shared their opinion that

there are no real differences between the generations in their affinity and satisfaction with the use of DL. One member, for example, stated that "as an older member of the CAF the greatest beginning difficulty was the technology of the computers and navigation of a DL course." Another stated that "when it comes to the younger generation, they are probably more comfortable doing stuff online…. we older [members] have to get used to it." Another member stated that "some of the senior NCMs… may not be as comfortable with computers…. so maybe they wouldn't be as positive or leaning towards using such a tool." Another shared, "maybe I'm becoming one of those old guys I don't know, but I'm reluctant, or hesitant to invest myself too much into DL." On the other hand, one member stated that "particularly for the younger generation that's starting to come through now, they're so used to technology and so used to the resources and being able to find things online and that kind of thing." Another member stated that "maybe the new generation responds better to DLN as they are less likely to want to leave "home" for a course and are more reliant on networking with "friends" they've never met."

Not everyone, however, saw generational considerations having a real effect on DL satisfaction. One Senior Officer shared his opinion that we tend to think of DL as, "generational, like all the young folks like it, the older people don't. I think that might be a bit of a misnomer or a fallacy because it just depends." A Senior NCM stated, "I certainly think that across-the-board of generations -so whether you're 19 years old or whether you're 55 years old… DL is a very good mechanism." As one 52-year-old member with 35 years of service in the CAF stated, "even us old guys can do it!" One 53-year-old member with 28 years of service made the point that even the older CAF members have been in a "technology powered workplace" for a long time now. "We may not be Digital Natives," he stated, "but we should be just about out of web-illiterates [in the CAF]."

Some members shared their perceptions regarding DL in relation to learning styles and preferences. Some members suggested that the CAF should be more “adaptable to different learning styles.” As one CAFJOD graduate shared, “everyone learns differently, DL may work for some but it does not work for me.” One member suggested that the CAF should “have some options for people. Some like DL… many like myself hate it. Basically stop looking for "one" solution because it will never work for everyone.” Another member stated that “not everyone is computer savvy (i.e. a digital native). There needs to be training available that is aimed at every type of learner.” Another stated that “we're getting better with identifying people with different learning styles and how they learn, and just try to adapt to it whenever we can…. otherwise we'll always be leaving someone behind.” A CAFJOD graduate stated that “many people learn in different ways, some prefer classroom instruction and some prefer DL and some prefer hands on courses. We should be helping people learn according to their strengths and not forcing everyone to supposedly "learn" in exactly the same way.”

A small number of members shared their perceptions regarding DL in relation to students cheating on their courses. One PLQ graduate stated that “DL encourages dishonesty.” “Too many students,” he added, “demonstrated a willingness to use resources, usually previous students, or multiple computers, to pass. Often skipping right to the tests as quickly as possible.” On the other hand, another member stated that, regarding academic dishonesty, “if one is unethical, they will be unethical via DL or in a residential environment.”

Comparisons between modes of delivery. The second category within this theme contained members’ comments comparing the two modes of delivery: DL and classroom and included members’ opinions regarding what should be delivered via DL versus classroom. Many members made comparisons specifically between the JCSP DL and the residential program. In

the comparisons between the two delivery modes, one member stated that he felt that the DL version of the course (JCSP) was harder and more work than the residential version given that classroom discussions require little work but that the DL equivalent in the forum discussions have mandatory responses with minimum word counts. This sentiment was echoed by another JCSP graduate who stated that "DL learning is more challenging than traditional courses in most respects, given the need to heavily research all aspects of interaction (weekly chats must be referenced)."

Some JCSP graduates shared their perceptions of the differences between the two programs: residential and DL. A JCSP DL graduate stated, echoing many other graduates of this program, that there is a "sense of inferiority" for the DL program in comparison with the residential version of the program. Another JCSP DL graduate stated that "the favorite version in terms of career standing is the residency version." The term "two-tier system" was used to describe the JCSP DL and residential courses, "B list" was used to describe the JCSP DL students and the phrase "second-class citizens" was used in reference to the DL students in numerous members' comments. One JCSP DL graduate stated that "the program needs to address if it regards the two programs as equal and provide them fair treatment."

Other comparisons between in-class and DL courses included comments regarding the networking aspects of face-to-face interactions versus online forums, the levels of interactivity, the levels of knowledge retention and effectiveness, quality of life issues, time availability issues and the cost benefits to the CAF in the perceived savings due to the use of DL.

Members had many opinions regarding what should be delivered by DL and what should be delivered in-class. "We need to be careful," one Senior NCM shared, regarding "what we are actually putting on distance learning." For occupational training, they stated, in respect to the

"hands-on piece," and the "application piece," using "solely distance learning could hinder." Also, they stated that with learning that is "too complex", such as the application of "leadership pieces" such as "value-based leadership" and "CF effectiveness," the CAF needs to "be very cognizant in the design process of how we do distance learning," as some design decisions may "not be as effective in getting the point across and in meeting the aim of whatever that lesson is."

Many other members echoed these sentiments that leadership courses require, at least, some portion of residential classroom interactions. A Senior NCM stated that the mode of delivery should be, "completely based on the intent of that training," and that "anything with the word leadership in it" should not be delivered by DL. He went on to state that "you can't breed a generation of people that think they can lead from that computer." One SLP graduate stated that the "DL method for any leadership training diminishes its effectiveness." Many different members shared their discontent with the fact that the ALP is presently running only as a DL course and stated that it requires a residential portion. One SLP graduate went so far as to state that the ALP is, "a waste of time in its current format." Another member stated that if group work or discussions are needed in the course, then "the course is not well suited for DL and should remain a residential course." Another stated that when "delving into issues and discussions," classroom settings should be used.

Some members thought that short courses were acceptable as DL, but that longer courses should be in-class. One member stated, in relation to the JCSP DL, that a "course of this duration… should not be done via DL." DL, another member stated, is "perfect for those courses that do not require extensive monitoring," and "fine for little refresher training." Other members stated that practical courses should have a portion, at least, of classroom time. Practical skills, such as drill and technical maintenance, for example, were mentioned for requiring hands-on

face-to-face training. One Senior NCM stated, “whether it's a mechanic or a maintenance person or technical, like in the Air Force or in the Navy… eventually you'll have to have hands-on.” Another Senior NCM stated that “the hard work has to be done prior” regarding deciding what should be delivered via DL or in residency. He went on to state that the CAF must question, “is this best delivered in a DL fashion, or is this best delivered in a classroom setting?” An SAP graduate stated that the “goal is to ensure we have a balance between the two.”

Benefits of a mode of delivery. The third category within this theme contained members’ comments and opinions regarding the benefits of each mode of delivery, including blended learning. Many of the benefits here echo the section that discussed the greatest satisfiers of DL and classroom. This category also examines the benefits of a blended training approach.

The benefits of classroom mentioned the most in these findings included allowing for shorter duration courses with better focused time, better enabling the confirmation of knowledge, and the common perception amongst many participants of the improvement of networking opportunities. Regarding the shortened focused duration for a course, one Junior Officer shared that, given the choice at one point between a short course to be completed in-house or a course to be completed by DL, he “chose the classroom because that way I was able to just go and do 3 or 4 days and get it done.” Members often noted the difficulty of completing courses while still trying to manage their other work obligations. Another member mentioned that attending classroom courses allows a, “live person [to] confirm that the student understands and is competent in the subject learned.”

Many members shared their belief that the main benefit of classroom courses is the improved interactions with the other students and staff. One Senior NCM stated, in relation to the residential portions of the Senior NCM courses, that the “networking is phenomenal.” She

went on to state that there is “so much experience in the room that… you put the topic out there and the facilitator is just there to make sure that the points are covered, but they teach themselves… through those conversations and those interactions.” Another member, an SAP graduate, stated that a classroom-based course, “allows the human tech net to begin and mature at earlier stages of careers and continues to higher appointments. Shared experiences are what bonds people.” One ILP graduate drew on the earlier positive experiences of his career and shared that, in the past, attending residential courses, “forced us to have actual conversations (and constructive debates).”

The benefits of DL mentioned the most in these findings included the flexibility of DL, allowing members to stay in their location, allowing cost savings to the CAF/DND and allowing for more time to formulate thoughts in discussions. Regarding flexibility, one member stated that a “positive impact is the ability to “self-schedule the online training at your time or availability.” One Junior Officer stated that “you can do it anytime you want…. If I want to work on it early in the morning or late at night, I can do that.” One Senior Officer who had completed the JCSP DL stated that the benefit of DL is the ability to study while still at home, in that it is a “very, very viable way of getting that requirement for people who just can't afford to upset their family for a year.”

Some members mentioned the perceived cost saving benefits to the organization in using DL. One member stated that DL “can be used very effectively to save the department lots of money and time.” Another mentioned that DL “saves money, allows for a standardized delivery, it’s easily maintained, it is easy to control.” In terms of benefits for course discussions, one member stated that in online forum discussions, “you have more time to assimilate the subject

and get your thoughts together before answering, less chances of having someone else taking over a discussion, more time to do research."

The perceived benefits of blended learning arose in the interviews and in response to the questionnaire open-ended questions. Many members who had completed the blended NCMPD courses spoke positively about the experience. As one SLP graduate shared, "I believe the DL followed by residential is still the best way to conduct courses. You can achieve a lot of the self-study and theory with the DL and reinforce it with face to face networking, syndicate exercises." "DL should support a residency," an SAP graduate stated, to provide an "unfiltered learning environment." One Senior Officer discussed a course where the theory was provided upfront in a DL portion. The in-class portion that included "interaction with the staff [and] other students who may have been in the situation," he shared, "gave me experience where the threshold knowledge [provided in the DL portion] gave me knowledge." Some JCSP DL graduates stated that their DL interactions improved after the residential visit after the first year. Some believed that the program should start with a residency upfront to enable richer discussions and to "prime the waters." "The quicker you could put that group of students together," one JCSP DL graduate argued, "the better they [would] interact."

Many members stated that for shorter and less complex courses, DL is fine but that leadership courses should be in-class or, at least, in a hybrid model. Where a hybrid model is used, an SLP graduate stated, the "subject matter must be complimentary." One member suggested that the CAF should "increase the support at all schools in the area of improving DL courses to maximize time at home and not away on course."

Suggestions for improvement of CAF DL. The final category in this theme is comprised of suggestions for improvement that members made. There were many suggestions that the CAF

ensure time be provided to students who are pursuing professional development via DL. One member suggested that the CAF must “mandate time to be "off the clock",” another suggested that a “more formal method” is required to ensure the required time be provided, and yet another member considered that if supervisors ordered members to take the time off to focus on DL, it “might have positive institutional changes.” Regarding the lack of time sometimes provided, one JCSP graduate stated that “there must be adherence to the commitment to provide an acceptable amount of time for education.” Without this time, “students are not placing the necessary time and effort into their studies.” One CAFJOD graduate stated that “Establishing “Learning Contracts” to be signed by CAF members and their supervisors assigning permitted hours per week for the DL course should be a requirement for all learners of DL courses.” This clear direction needs to be provided to all commanders, one JCSP DL graduate argued, and the time provided, “needs to be applied across the board, as some students had lots of time and others did almost all of it after hours.”

In addition, members often mentioned that options for workspaces should be provided. Although many members stated that they liked to be able to work at home on their DL studies, some member suggested that it would be helpful if, “computer labs,” an “internet café,” or a “quiet area” in the workplace could be made available where members could focus on their DL without interruption. One JCSP graduate suggested that “perhaps bases could establish designated library or work areas for DL learners, which would keep them reasonably accessible to their workplaces if needed for meetings, etc, but still provide some protection from the workplace itself.”

There were also suggestions related to aspects of DL course design. Some of the JCSP DL graduates, for example, suggested that the content, deliverables, and level of effort should be

equivalent to the residential version of the program. Another member who had graduated from the CAFJOD program suggested that the school should, “pace the course out better such that reading/course work doesn't spill well beyond normal working hours.” Another JCSP DL student suggested, “Concevoir le programme d'études de façon réaliste avec des objectifs réalisables dans les délais fournis [Design the curriculum in a realistic way with achievable goals within the given timeframes].” Yet another member suggested, “plan out deadlines and deliverable well in advance and avoid changes to these timings.” One CAFJOD graduate suggested a course should be verified beforehand. He suggested that schools, “have students and instructors review it before it goes live to ensure it's understandable and flows well between topics.”

In terms of the content and resources, one JCSP suggested that the CAF “enter the 21st century” regarding the use of DL. He stated that the “material, training aids… were archaic.” Many members suggested that more interactivity be built into DL programs. One member suggested the use of “online debates/forums where live interactions could take place (weekly, even monthly),” another suggested that the CAF should, “increase the use of online forums,” and yet another recommended that the CAF “improve the group discussions.” One CAFJOD graduate suggested that the CAF should “provide a richer learning environment by enabling discussions (either in person or in forums) during CAFJOD. A pure "Death By DLN" approach misses opportunities to have meaningful discussions related to content applicable to development of a sense of membership in the profession.” Regarding discussion topics, one member suggested that DL courses should, "Aborder des sujets qui touchent un peu plus les candidats du cours [Discuss topics that affect the course candidates a little bit more.]”

Some members suggested that course design could be improved by looking to external institutions and courses that specialize in creating DL courses. One member suggested that the CAF, “go to a university that specializes in on-line learning and is renowned for the quality of their curriculum and mirror that.” Another member suggested that the CAF should be “adopting some of the best practices seen in… successful examples,” such as in, “Massive Open Online Courses (MOOCs)” and the “great collection” of courses at “Coursera.org.” Another member suggested that the CAF should “engage innovative commercial platforms and companies to develop courses.”

Some members suggested that more technology should be leveraged to increase interactivity, variety of methods and make the content more engaging. One member suggested that the CAF could have “more interactive programs with some live interaction through the use of technology.” One member suggested the “use of better and more effective interactive media (such as automatic response questioning)” and the “use of multimedia (video and automation).” Presently, courses in the CAF, one member shared, “pretty much involve a student reading through a slide deck - these need to be improved.” One member suggested that the CAF should “improve means of connecting students to allow for greater discussion.”

Some members suggested that more video teleconferences (VTCs) and/or teleconferences be used, both for interactions with full classes and one-on-one with instructors/mentors. One member suggested that DL courses should “inject VTC's into the mix to allow face time and group discussions.” Another echoed these ideas saying that “Probablement que des sessions "face time" modérées par un mentor apporterais à mon avis un certain plus value à l'expérience [Probably "face time" sessions moderated by a mentor would, in my opinion, bring some added value to the experience].”

Some members suggested that video and audio media could improve DL. One member, for example, suggested that even video recorded lectures could "help deliver information in different formats" as "not everyone learns by reading." Another member suggested that the CAF, "introduce/increase… YouTube video instruction." An ILP graduate stated that "plus de video, enregistrement audio (possibilité écouter partout) [More video, audio recording (possibility to listen everywhere)]" could potentially increase the satisfaction levels of CAF members regarding their DL courses.

Many suggestions were made regarding technologies and the LMS used for DL in the CAF. Regarding hardware, one member suggested that everyone could be equipped with a tablet at the beginning of the course. This would provide for consistency across the class and deal with any issues of personal IT equipment. Another member suggested that laptops should be more available to CAF members to aid them in their studies. Another member suggested that the DLN be improved in order to "work better on different devices." Regarding required software, one member suggested that the CAF must "ensure appropriate access to required software" for all DL courses.

With regards to the LMS, there were many comments suggesting that the platform must be improved. Members offered suggestions such as, "fix the DLN," "better/more reliable learning platform," "develop a platform that does not crash all the time," "upgrade the platform," "revamp the website / learning platform," and "invest in a virtual platform that is conducive to a DL learning environment." One PLQ graduate suggested, "FIX THE PROGRAM altogether - I don't know if that means better technical staff or creating a whole new program but it needs to work better. It just needs to not have so many glitches and errors." One member suggested "better navigation," and yet another suggested that all courses should be on one platform to

enable better technology support. Several members mentioned that they believe Moodle would be a better LMS for the CAF to use. Another member suggested that the CAF, "Look at universities that are using the Moodle interface to reach students and see how they are delivering quality education with the same type of technology, but in a way that forces a higher level of engagement."

Members also offered suggestions regarding accessibility. Members suggested that they would like to be able to download a "clean, searchable PDF copy of each course." One member suggested that the CAF should "keep the content low-bandwidth friendly or have low-bandwidth options!" and another suggested "create less bandwidth-intensive or downloadable versions of courses for when fast internet is unavailable." As was discussed in an earlier theme, members often have bandwidth issues while at sea and due to these issues, one CAFJOD graduate suggested, "ensure that our ships at sea are able to download the content regardless of their bandwidth constraints."

Other suggestions regarding technology included an "investment in some real-time voice over IP technology… to increase the socialization between students," and that the CAF ensure "robust IT support." One CAFJOD graduate suggested that "open software architecture would give academia and industry [the ability] to help keep our training tools relevant." One member suggested, "improve the web browsers on the DWAN so that when researching you do not get the following error "your browser is not supported" for this content." Another suggested that inactivity times should be increased "prior to being pushed off the network." Another member, a CAFJOD graduate, suggested that the CAF should ensure that the "content all works on DWAN [Defence Wide Area Network] systems."

Some members made suggestions regarding course content. Members suggested that content must be kept up to date and that it must be relevant. One member rightly stated that "it's hard to be confident in the validity of what you're reading when it looks (or in fact is) out of date." One member suggested that schools must listen to the feedback provided and make required changes to content. One SLP graduate suggested that "DL material for NCMs should focus less on abstract theory and concentrate more on practical application of the material."

Some members made suggestions regarding networking. Some members suggested that networking groups of DL students could be started at units and bases. One PLQ graduate, for example, suggested that "if more than one person [is] completing the course on base, maybe have once a week sessions where the individuals must attend to touch base with others to ask questions and become a part of a group atmosphere." Another member suggested that the CAF "establish more of an online community for collaborative learning." One SLP graduate suggested that the CoC could also provide networking and mentoring opportunities to their members. "Students," he suggested, "could increase their satisfaction level by taking advantage of leaders in their own units to help them understand concepts, form better thoughts in their written material, etc. Members who are completing the course in isolation are missing a great opportunity to be mentored and to discuss current CAF issues with their CoC."

Some members made suggestions regarding instructors. One CAFJOD graduate suggested that the CAF, "give students direct contact with an instructor" and another asked for "more feedback from an instructor." Another member suggested that "access to the professors" should be made, "available after hours, even in the form of email or voice mail." A JCSP graduate stated that she would have liked "to see the instructors more engaged during

discussions." Another member suggested that instructors in the CAF should be encouraged to be flexible on deadlines.

Some members made suggestions regarding logistics, scheduling of courses and course offerings. One CAFJOD graduate, for example, suggested that "allowing students to register freely into the CAFJODs would greatly increase the satisfaction level" and yet another suggested that "these should always be open and accessible for completion at any time." One ALP graduate suggested that "ILP/ ALP should be given far earlier in a soldier's career, so they understand the CAF better earlier." One member suggested that better planning is required so that members can be assured that deployments and DL do not conflict. Another member suggested the CAF provide more DL course offerings and stated that "many courses are not catalogued or not recognized and could be elevated IOT [in order to] enable users within the CAF community." Another member suggested that courses, such as leading to a high school or college diploma, should be offered online to members.

Some members made suggestions regarding the promotion and support of DL in the CAF and regarding related policies. One member stated the CAF should "ensure widespread support" for DL and another, an ALP graduate, stated that that the CAF should "entrench policy to back the importance and significance of DL. Promote DL and its benefits to the CAF, not just for mandatory DL courses."

Chapter Summary

This chapter presented the qualitative findings, both from the questionnaire open-ended responses, the interviews, and the researcher notes. The qualitative findings and analyses corroborated and added depth to the quantitative findings, as described in Chapter 4.

Qualitative data, gathered from the open-ended questions of 368 questionnaires and 12 follow-on interviews, was analyzed for coding frequencies and thematic coding analysis. The coding frequency analyses found that the most referenced satisfiers for DL included flexibility and the ability to stay in one's location. The most referenced dissatisfiers for DL were the lack of meaningful interactions and networking with peers, and issues concerning technology. In response to a question regarding why a member would choose one delivery mode over another, coding frequency analyses were completed on the two sets of responses. For those who chose DL, the most frequently stated reason was flexibility, followed by the ability to be with one's family. For those who chose classroom, the most cited reason was the networking and peer interactions, followed by interactions with instructor sand school staff.

The data set was rich with CAF members' commentary, stories, and examples that were used to illustrate the five themes that emerged inductively from the data. These five themes are summarised below:

- Work-Life-DL Balance -- CAF members described their challenges balancing work, DL, and their personal lives. Not having enough time available to devote to their PD DL efforts was an issue raised in relation to the juggling act that is often required, all with varying levels of support from their military Chain of Command, family and co-workers. These required PD courses delivered via DL, along with other workplace and home commitments, appear to be causing stress on some CAF members' mental and physical health, as well on their family situations. These issues, for some, decreased satisfaction levels concerning their DL experiences.
- Technology -- Many CAF members commented on technology supporting DL. Topics raised included issues with accessibility, connectivity and bandwidth,

usability aspects, and issues regarding the LMS used for their DL courses. A range of perceptions regarding DL technologies, at large, were also presented. Although some members suggested that technologies supporting DL have improved over the years, there was much evidence to suggest that the technologies supporting DL in the CAF at present are decreasing satisfaction of the DL experience for some members.

- Course Quality -- Different issues of DL course quality were discussed that can influence CAF members' satisfaction with their DL experiences. Interactions with peers, instructors and content, perceptions regarding the quality and effectiveness of the course content and resources provided, course design issues and course logistical issues were all discussed in relation to positive and negative perceptions and DL course satisfaction.
- Military-Specific Considerations -- Military-specific considerations affecting DL experiences included operational activities, postings, military-related work factors, and career considerations. The issue of juggling military-specific responsibilities with DL was also discussed. Members shared insightful examples of the unique challenges they often faced in relation to their DL and how these issues affected their satisfaction with their DL experiences.
- Current and Future Uses of DL -- The final theme explored members' views on present and preferred future use of DL in the CAF. It included their present perceptions, comparison between the modes of delivery and the benefits of DL, classroom, and blended delivery, and it included a fulsome range of members' suggestions for improvements in CAF DL. The analysis within this theme showed

that there was a wide range of opinions, often strongly held and emphatically shared, regarding the present use of DL in the CAF and concerning the future direction the CAF should take with regards to the use of DL.

Chapter 6. Integrated Results and Discussion

Overview

In the preceding two chapters, the quantitative and qualitative results of this research were presented. In this chapter, the integration of the results of both the quantitative and qualitative data and the resulting analyses will be presented and discussed, including some discussion of how these results relate to the current body of knowledge in this area of study as described in the literature review.

As there were much data returned and analyzed in the previous two chapters, these integrated findings will focus on those findings that were deemed the most salient and noteworthy, namely: 1) overall satisfaction with DL, 2) members' preferred delivery mode; 3) technology as a course quality consideration of DL satisfaction; 4) interaction as a course quality consideration of DL satisfaction; 5) work/life balance and Chain of Command support as a consideration of DL satisfaction; and 6) military specific considerations affecting DL experiences. This chapter will end with a discussion regarding the effectiveness of the questionnaire used in this research, a discussion on the Reflexive Journal kept throughout the research process, and then a summary of all the integrated results of this research.

Integration of Quantitative and Qualitative Results

In mixed methods research, after the quantitative and qualitative research findings are analyzed separately, analyses based on the integration of the two sets of data is completed. In this study, integrated analysis allowed for a more fulsome exploration of the research findings, which were guided by the following research questions:

1. To what extent are CAF Regular Force members satisfied with their DL experiences?

2. What are the relationships between student satisfaction amongst CAF Regular Force members regarding their DL experiences and their individual characteristics, their satisfaction of DL course quality, their satisfaction with support, and their general perceptions towards DL?
3. How do CAF Regular Force members perceive that military service affects their DL experiences?

In the next sections, overall satisfaction with DL and members' preferred delivery mode will be presented in relation to the first research question. Technology, interactions, and work/life balance and support from the Chain of Command will be discussed in relation to the second research question. This will be followed by military specific considerations affecting DL experiences, in response to the third research question.

Overall Satisfaction with DL

Satisfaction can mean different things to different people. As was previously stated, participants were given a definition to consider in relation to this question, as follows: the positive feeling a learner has when their expectations have been met with regards to their cognitive and affective needs for their training and/or educational experience. In response to the question of how satisfied overall the member felt with their CAF DL experience, a relatively high number of participants, 78% (n=368), indicated that they were somewhat or very satisfied with their overall DL experiences. Only 16% of respondents said that they were either somewhat or very dissatisfied with their DL experience. The qualitative findings regarding overall satisfaction with CAF DL showed a wide range of responses regarding overall satisfaction with DL, from very positive to very negative. One member, for example, stated that their DL was "the best learning experience," while another emphatically state, "I cannot convey the depth of

my dissatisfaction." Most members, though, were generally satisfied and provided valuable input as to how they believed DL in the CAF could be improved.

Members' Preferred Delivery Mode

Although approximately 8 out of 10 respondents were, overall, either somewhat or very satisfied with their DL experiences, as seen above, the findings showed an apparent and noteworthy contradiction. On one side, these findings seem quite positive from the perspective of the CAF training system. However, on the other side, the data showed that 71.7% of respondents would choose the classroom, given the choice between the two modes of delivery, DL or classroom.

It appears that a person may consider that they were satisfied with their DL experience, and yet still, if given the choice, would prefer the classroom delivery option. In the case of these CAF professional development courses, most candidates would not have been given an option.

The qualitative data garnered from the interviews and open-ended questions supported and added depth and explanation to these findings. There was a wide variety of responses and shared experiences regarding overall satisfaction with DL, as well as the reasons why members felt more positively or negatively towards each mode of delivery. The greatest satisfiers associated with DL were flexibility and the ability to stay in one's home location. Many members also commented that DL has been improving over the years, and that they were quite satisfied with their experiences. The greatest dissatisfiers, however, were the lack of meaningful interactions and networking with peers, as well as technological issues.

The finding that members chose classroom-based study more often than DL as their preferred delivery mode echoes earlier findings in a 2012 DND "Your Say" survey (Budgell et al., 2013). In that research, it was found that, out of four delivery mechanism options (i.e., DL,

blended, classroom, and alternate training delivery (e.g. through a community college)), only 15% of respondents indicated that they most liked the programs delivered completely by DL and 49% reported that they liked DL the least. The findings in this research that a relatively high percentage of CAF members showed satisfaction with their DL experiences and yet, a much higher percentage of members chose classroom as their preferred method begs the question of what variables could account for members' preferences for classroom as a delivery mode over DL and what variables act as satisfiers and dissatisfiers for both DL and classroom.

In a code frequency analysis of the responses to the question of why one made the choice that they did between DL and classroom, the code that was the most highly referenced for those who chose a preference for classroom learning was networking and peer interactions and the second most highly referenced was better interactions with instructors and staff. On the other hand, the topic that was the most frequently mentioned for those who chose a preference for DL was flexibility and the second most frequently mentioned reasons were family related and that DL was self-paced.

Technology as a Course Quality Consideration of DL Satisfaction

Technology was a subject that arose frequently in both the quantitative and qualitative research data, both as responses to direct questions as well as spontaneous ideas in relation to satisfaction and ways to improve DL. For example, when asked about satisfaction with "effective course technology (e.g. DLN)," as a course quality variable, 21.3% of respondents (n=366) said that they were somewhat or very dissatisfied. In the perception statements section of the questionnaire, as well, the statement that "The CAF has good technical support systems in place to help should any technical problems arise during DL courses" yielded the findings that 27.0% of respondents (n=363) either disagreed or strongly disagreed with this statement. The

responses to these two questions indicate that a portion of CAF members have negative perceptions regarding DL technologies and technical support in CAF DL. This relates to earlier DND "Your Say" survey research (Budgell et al., 2013), that found that only 45% of respondents agreed that the CAF makes good use of technology in courses.

In the correlation analyses for course quality variables, it is noteworthy that all course quality variables had positive significant correlations with overall satisfaction. Indeed, two of the strongest significant positive correlations with overall DL satisfaction both involved the satisfaction with course technology, and specifically were: 1) course technology that helped to reach course objectives ($r_s(365) = .557$, $p < .01$); and 2) effective course technology (e.g. DLN) ($r_s(364) = .557$, $p < .01$), both of which would be considered of moderate strength. With the further multiple regression analyses, both "Effective course technology" and "Course technology that helped to reach objectives" were shown to be significant predictors of DL overall satisfaction. These findings support research discussed in the literature review. Aman's (2009) regression analysis, for example, showed that course technology was a significant quality factor contributing to increased learner satisfaction.

The qualitative data, from the interviews, researcher notes, code frequency analyses and the thematic analysis, support the quantitative findings that the topic of technology was relevant to CAF DL satisfaction. It was so prevalent in the qualitative data that it emerged as a theme unto itself. The technology theme included the following four categories: 1) accessibility; 2) usability of technologies supporting DL; 3) learning management systems; and 4) perceptions regarding DL technology in the CAF. Although some members indicated that the technology to support CAF DL has improved over the years, fewer positive sentiments and experiences concerning CAF DL technologies were shared. There were many comments regarding

difficulties experienced with DL technology including issues of connectivity, bandwidth, technical support, usability issues including such things as personal comfort with the technologies, difficulty navigating in the LMS, firewall issues, search engine issues, the system being down or "crashing," and a vast array of "technical hiccups" that were generally found to be "distracting" and, even sometimes, "infuriating."

Interactions as a Course Quality Consideration of DL Satisfaction

Different course quality variables were subjects that arose frequently in both the quantitative and qualitative research data, both as responses to direct questions as well as spontaneously arising in relation to satisfaction and ways to improve DL. Many of the course quality variables were rated high in levels of satisfaction. The following three, for example, were the top three rated course quality variables, with the percentage after the variable indicating the percentage of respondents that indicated that they were either somewhat or very satisfied with the item: 1) clear learning objectives (88.3%; n=367); 2) clearly described course assessments (83.1%; n=367); and 3) course materials provided that helped to reach course objectives (80.3%; n=367).

Of note and based on the relatively large amount of data collected on the subject in this research, issues with satisfaction in relation to interactions with peers and instructors emerged often in both the quantitative and qualitative data. The two course quality variables that showed the highest level of dissatisfaction amongst respondents in the quantitative data from the questionnaire, with the percentage after the variable indicating the percentage of respondents that were either somewhat or very dissatisfied, were as follows: 1) feelings of being part of a learning community (23.4%); and 2) collaborative groupwork with classmates (23.0%).

Some perception statements in which members showed a high level of agreement also indicated some dissatisfaction with this aspect of DL courses. For example, 81.5% of respondents (n=368) agreed or strongly agreed with the following statement: "DL learners miss out on valuable group discussions due to not being physically face-to-face." In another example, 77.3% of respondents (n=356) agreed or strongly agreed with the following statement: "CAF members suffer from a lack of face-to-face mentoring due to the increase in DL." In a third example, 71.7% of respondents (n=367) agreed or strongly agreed with the following statement: "CAF members build less social networks due to the increase in DL."

The correlation and predictive analyses also showed relationships between satisfaction of peer and instructor interactions and overall satisfaction for CAF DL. Correlation analyses were performed on several examples of variables concerning satisfaction of interactions with peers and instructors in relation to the variable of overall satisfaction. All these correlations were found to be significant, positive, and of moderate strength. The results were as follows, in descending order of strength: 1) feelings of being part of a learning community ($r_s(342) = .579$, $p < .01$); 2) collaborative group work with classmates ($r_s(293) = .553$, $p < .01$); 3) interactions with classmates ($r_s(303) = .546$, $p < .01$); and 4) effective communications with instructor ($r_s(317) = .441$, $p < .01$).

Within the exploratory factor analyses, two factors emerged regarding interactions: interactions with classmates and interactions with instructors. Both factors were found to significantly predict overall DL satisfaction. Individual components such as "Feeling of being part of a learning community," "Effective communications with instructor," and "Constructive feedback from instructors on assignment and assessments" individually, were all found to be significant predictors of overall DL satisfaction. When a regression analysis was completed on

all seven of the identified factors in this research, the strongest factor that predicted overall DL satisfaction was found to be the course quality factor associated with a lack of satisfaction regarding interactions with classmates.

These quantitative findings align with the findings of the coding frequency analysis completed in Chapter 5 that found that the greatest DL dissatisfier was the lack of meaningful interactions and networking with peers. In the same vein but stated in another way, the code frequency analysis in response to the question regarding why one chose classroom as the preferred delivery mode, the code that was the most highly referenced for those who chose a preference for classroom learning was networking and peer interactions. These findings are also in line with Cole, Shelley, and Swatz's (2014) research, cited in the literature review, which found that a lack of interaction was the most cited reason for dissatisfaction in DL.

The qualitative data analyses, both in the code frequency analyses and the thematic coding analysis, support and add depth to the quantitative findings specifically regarding peer and instructor interactions as an issue of course quality. Although some members stated that they enjoyed and valued the online forums, many stated that they missed the face-to-face interactions, that they felt they missed out on the networking opportunities to grow their "tech-net" and they missed the feelings of camaraderie that residential courses provide. Members stated that they felt DL was isolating, that the online discussions felt forced and impersonal in that it is often difficult to gauge the emotions that one would see through body language in class. Graduates of the CAFJOD program and PLQ found it unfortunate that there were no interactions with peers in these programs. One member called the CAFJOD a "solo endeavor." Several NCMs shared their disappointment with the fact that there is presently no residential portion for the ALP and felt that the students miss out on crucial networking opportunities due to this fact.

Work/Life Balance and Chain of Command Support as Issues Related to DL Satisfaction

A topic that emerged strongly in the research data, both through answers to posed questions and spontaneous discussion in the qualitative phase, was work/life balance including DL's effect on family and personal time, support from the Chain of Command and, specifically, time provided by the Chain of Command for DL studies. In questions concerning members' agreement with perception statements, the statement that had the highest level of agreement was the following, with 92.1% agreement (72.3% strong agreement): "CAF members who are DL learners are often required to complete their studies while continuing to be responsible for their normal position workload" (n=368).

Many members shared that they were given various amounts of time during the workweek to complete their DL. When asked about members' satisfaction with support from the Chain of Command, 71.7% of respondents answered that they were either somewhat or very satisfied and 15.8% reported that they were either somewhat or very dissatisfied. These numbers could relate to those presented in DND's 2012 "Your Say" survey findings (Budgell et al., 2013) where it was reported that 65% of respondents agreed that they were able to balance their work/life commitments during the DL portion of their courses.

Some members, however, reported not being permitted to use working hours for DL or not personally being able to divorce themselves from their heavy workloads to focus on their DL. One question in the survey asked members to comment on the time they were given during working hours for their DL program/course. A coding frequency analysis was completed on the responses of this question and the top three topics mentioned were as follows: 1) time as available; 2) one day per week; and 3) no time. This shows that there was a range of realities for members in terms of time provided, but the concerns of those who received "no time" or not

enough time, were very pronounced in the qualitative findings. These members who had, or in some cases chose to, complete their DL on their personal time sometimes faced difficulties that included physical, mental health and distress and issues with balancing their family responsibilities. They discussed their overall challenges in juggling their workload, their DL studies, and their personal and family life.

This issue was illustrated by a code frequency analysis that was completed based on a question that asked members to identify their greatest dissatisfiers with DL. In this analysis, the third and fifth most frequent codes referenced were: balancing job with DL (3rd most frequent code); and work/life balance, including family issues (5th most frequent code). The perception statement "DL increases the chance of burn-out for CAF members," was either agreed or strongly agreed upon by 36.9% of respondents (n=363). This seems to indicate that some members perceive that DL, potentially through the difficulties that arise from juggling work/life balance, can cause issues for some members. These findings were corroborated by the qualitative data, in that the phrase "burn-out" and related discussions arose numerous times. As one member astutely stated in relation to this topic, "you can't burn the candle at both ends."

Correlation analyses were done for support variables, including support from the Chain of Command, family, and co-workers, in relation to overall DL satisfaction. Support from the Chain of Command was found to be significantly correlated with overall DL satisfaction ($r_s(358) = .294$, $p < .01$). Multiple regression analysis was conducted for the support factor, which included support from the Chain of Command, family and co-workers combined, and it was shown to have a significant impact on overall DL satisfaction. When separated out, the support from the Chain of Command variable was found to be the most significant support predictor of overall DL satisfaction.

Presently some members make agreements with their Chain of Command prior to starting their courses regarding the time they will use during working hours to complete their DL. Some members thought that this was a helpful strategy as 68.5% of respondents (n=368) agreed or strongly agreed with the following perception statement: “Establishing “Learning Contracts” to be signed by CAF members and their supervisors assigning permitted hours per week for the DL course should be a requirement for all learners of DL courses.”

The qualitative data that was gathered supported and added depth to the quantitative findings. Some members shared their stories of working long hours with heavy workloads and DL course commitments. Some members shared their stories about trying to juggle their work and DL commitments and how this caused strain on their family situations. Some members suggested that perhaps time away from work duties should be a mandatory requirement in order to allow the member to have a more focused and valuable learning experience. Others suggested that if the CAF were to provide quiet workspaces or computer labs away from the regular workplace, this could be beneficial and allow a member to better concentrate on the DL course and have less interruptions.

The findings of this research echo the points made by Thorne (2011) in his article that was included as part of the literature review in Chapter 2. Although he mainly discussed educational pursuits in terms of university degrees, he concluded in his article that those members who study on their own time, either through choice or necessity, outside of working hours, must work particularly hard to balance their work and family obligations with their educational pursuits. Work/life balance, he argued, can have a great effect on learners’ satisfaction.

Military Specific Considerations Affecting DL Experiences

Questions regarding the military specific considerations that affect CAF members' DL experiences were posed mainly in qualitative questions, both as an open-ended question in the questionnaire and as an interview question. One quantitative question related to this subject was posed in the questionnaire that asked the level of agreement with a DL perception statement. The statement was: "DL studies are often significantly disrupted due to military-specific issues such as postings and operations." When asked to rate level of agreement with the statement, 70.8% agreed or strongly agreed (n=363).

Qualitative results for the interview question were presented in the previous chapter under the military specific considerations theme. Questions included how military specific considerations affected the DL experience and if these considerations influenced the members' satisfaction with their DL experiences. In a code frequency analysis where a simple coding scheme was used of: 1) yes; 2) no; and 3) somewhat, 176 references were coded. Of these, 104 references were coded as yes, 64 references were coded as no, and 8 references were coded as somewhat. From this, we can generally see that more participants believed that military-specific considerations influenced their DL satisfaction than not.

The responses regarding how military specific considerations affected the DL experience, garnered both from the open-ended question in the questionnaire and from the interview discussions on the topic, led to the emergence of a theme in Chapter 5 titled: Military Specific Considerations affecting DL experiences. This theme had five categories including: 1) operational activities; 2) military work factors; 3) juggling DL with other military-specific responsibilities; 4) postings; and 5) military career considerations. The qualitative analysis

revealed that, indeed, there are a wide range of military-specific experiences and challenges that can affect DL satisfaction.

The qualitative data produced a rich data set of stories that exemplified the common challenges and experiences that military members encounter as they pursue their professional development courses via DL. Pursuing professional development by distance across different time zones, in different countries, during international and domestic operational activities, being disrupted due to postings to new positions in other geographical regions, in the field, on ships and submarines, through high operational tempo, while juggling other unit responsibilities, without Internet access, reliable accessibility or bandwidth, and while completing other training courses are all examples that were provided that can add additional challenges for military members. Members suggested that granting flexibility in military professional development is paramount in order to aid members in their success. Such things as allowing for deadline extensions due to other military obligations and ensuring course design flexibility, such as allowing for the downloading of course content and alternative offline activities for members who may not have access to Internet connections, would be beneficial to the military population in dealing with the military-specific considerations that can influence members' DL experiences.

Questionnaire Effectiveness Discussion

As the questionnaire for this quantitative research was an original tool, I consider it valuable to reflect on its effectiveness in answering the research questions that were posed in this research. The questionnaire evaluated the participants' level of overall satisfaction with CAF DL with one self-reflective question and the response to this question became the variable that was used in the correlation and predictive analyses to measure against other variables. In retrospect, a scale of questions could have been used to evaluate the members' overall satisfaction as a

construct, which may have generated a more accurate picture of the members' overall satisfaction. In order to baseline participants' understanding of the concept of satisfaction in this research, I did, however, provide an operational definition of satisfaction prior to the question. This, I believe, added to the participants' ability to more accurately self-assess their overall satisfaction levels.

The questionnaire generated a much larger size of qualitative data than anticipated in response to the open-ended questions. I considered this aspect of the data collection to be a real strength of this questionnaire and, this, in addition to the interview data, allowed for a very rich and descriptive qualitative analysis.

While there were 368 questionnaires that were retained after the data cleaning, approximately 20 participants did not answer through to some of the last questions. In retrospect, it would have been preferable to order the questions so that all questions accounting for the quantitative variables, such as the demographic questions, were asked upfront to ensure this information was captured more fully for analyses. The open-ended questions, for example, may have been better placed at the end of the questionnaire.

In general, the questionnaire was deemed acceptable in that it provided the data required to answer the research questions. Some improvements, however, could be implemented if it was to be used as a tool for future research.

Reflexive Journal Discussion

Throughout the data collection and analysis phases, I regularly documented my research reflections in a journal. In qualitative research, you can never completely remove the researcher as part of the research. You can, however, make every effort to reduce interviewer effects and researcher bias. I used the reflexive journal to aid my bracketing, which is a term used to

describe purposely setting aside one's own preconceived notions throughout the research to avoid the tainting of the findings (Tufford & Newman, 2012). When I started my reflexive journal, I purposely recorded my own preconceived perspectives and then, also, any emerging perspectives that arose throughout the research journey.

The first entry in my reflexive journal outlined all my own beliefs regarding DL in the CAF including from my own DL experiences and many of the anecdotes that I had heard from other members during my career. I had perceived that there was a wide range in DL course quality in the CAF/DND, that there had been much improvement over the years, and that there were educated and motivated training development staff who were working hard to create more engaging DL courses. I had also, on the other hand, experienced courses that were not at all engaging and I had also experienced a range of technological issues. Anecdotally, I had heard of members having difficulties balancing their work, DL and family lives but I had also heard of members being provided time during working hours to devote to their DL PD courses.

During the data collection, I summarised my experience after each of the interviews, including my own perceptions of the discussions, often beyond the words that were captured in the transcripts. As I worked through the data collection and analysis phases, I regularly journaled about my experiences and my related thoughts and feelings.

At the end of the analysis phases, I reflected on the research journey and how my perceptions regarding DL in the CAF had evolved. Indeed, I found that my depth of understanding had grown and some of my earlier perceptions were either confirmed or, with the new information, I was able to evolve my own understanding. Many of the anecdotal tales that I had heard over the years were echoed by the participants, such as the issues with time management and work/life balance regarding DL. Although I had some mild frustrations

concerning technology with my own DL experiences, I found that the technological issues were more vastly reported in this research than I would have originally expected. As I had participated in peer interaction/forum discussions during my own Officer Professional Military Education (OPMEs) DL courses over ten years ago and really enjoyed that aspect of the courses, I was surprised to learn that there are no longer any peer interactions built into the newer version of the program (CAFJOD program) and that, as one member stated, it was a "solo endeavor".

The goal of this journal was to increase my ability to uphold a reflexive attitude throughout the phases of the research and enable me to summarize these reflections as part of the research analysis. This goal was achieved, and I found that the reflexive journal was a beneficial tool to document my thoughts throughout my own experience and to draw on its contents adding depth to the data analysis.

Chapter Summary

Steered by the three research questions and, inductively, allowing the most noteworthy of the findings to be highlighted here, the quantitative and qualitative findings in this research were integrated and presented in this chapter, along with a discussion regarding the effectiveness of the questionnaire used in this research and the value of the reflexive journal that was kept.

First, the overall satisfaction of members with their DL experiences was presented as well as the related data regarding the members' choice of preferred delivery mode. It was shown that members had a rather high level of satisfaction with their DL experiences but when given the choice, with all other aspects remaining equal, members were more likely to choose the classroom delivery mode. This appears to be an apparent contradiction, but the qualitative analyses provided various reasons for this. The perceived increase in networking and peer interactions during classroom learning experiences, for example, led some to prefer classroom

over DL. Technology and interaction, as variables of course quality, were shown in both the quantitative and qualitative data to be important variables in relation to DL satisfaction. In fact, it is a noteworthy finding that all course quality variables listed in this study had significant positive correlations with overall satisfaction to a moderate strength. The factor related to classmate interactions was shown to be the factor that was the strongest significant predictor of overall DL satisfaction, over the other five factors identified. The qualitative data also supported the importance of these variables in relation with the members' DL satisfaction.

Work/life balance and Chain of Command support were salient topics that arose from both the qualitative and quantitative data. Chain of Command support was found to have a significant positive correlation with overall DL satisfaction, albeit of a weak strength. When support underwent regression analysis in relation to overall DL satisfaction, support from the Chain of Command stood out as the strongest predictor amongst the individual support measures. Demonstrated both through the quantitative and qualitative findings analyses, the time provided for DL study, support from the Chain of Command, and members' abilities to juggling their work life, their home life, and their DL, influenced the members' satisfaction, either positively or negatively, with their DL experiences.

Military specific considerations that affect DL experiences were also presented. Members largely agree that these wide-ranging aspects can affect DL experiences and that a measure of flexibility should be systematically built in to account for these and to aid in members' success.

This chapter concluded with a discussion on the effectiveness of the questionnaire used in this research, both in the collection of quantitative and qualitative data, and with a discussion on the value of the reflexive journal kept throughout the research process and with a summary of personal reflections included within.

Chapter 7. Conclusions and Recommendations

Overview

CAF Individual Training & Education strategies within the CAF have been calling for training modernization and an increase in cost efficiency in achieving the required training and education of members. New technologies and methods to optimize the use of DL are continually being explored to advance these strategies. Since research has shown that learner satisfaction can be linked directly, or through mediating variables, to various positive learner and organisational outcomes, such as readiness to transfer learning, levels of absenteeism, retention, and students' intention to recommend the training to others, it was deemed as valuable research to benchmark CAF DL students' levels of satisfaction and explore various variables that can affect this satisfaction.

The aim of this research was to determine the following: 1) the levels of satisfaction of CAF members with regards to their DL experiences; 2) how overall DL satisfaction is related to different variables, such as demographics, satisfaction of DL course quality, satisfaction with support, and perceptions towards DL; and 3) how CAF members perceive military-specific considerations to affect their DL experiences.

These questions were investigated using a mixed methods approach consisting of two phases. The quantitative phase consisted of an online survey and the qualitative phase consisted of interviews, which corroborated and added depth to the quantitative findings through shared experiences. As there has been a lack of research done related to satisfaction of DL in the CAF and regarding the specific military considerations that can affect the DL experience, these results are beneficial and original contributions to the current DL academic body of knowledge. This research is particularly unique in that the military population of learners has characteristics that

set it apart from other populations. The findings also led to some recommendations, as will be detailed below, that aim to improve DL in the CAF and improve numerous related factors that affect the members' DL experiences.

In the following sections, conclusions from the findings will be presented for the three research questions. Recommendations for DL practice in the CAF will then be shared, as well as recommendations for future research in this area. The chapter will end with some concluding thoughts.

Conclusions from the Research Questions

The conclusions of this research study are presented in this section in response to each of the three research questions.

Overall satisfaction of CAF Regular Force members with their DL experiences. The first research question in this study posed the question, "To what extent are CAF Regular Force members satisfied with their DL experiences?" The quantitative analysis showed that, overall, members are quite satisfied with their CAF DL experiences in that more than three quarters of participants responded that they were somewhat or very satisfied with their CAF DL experiences. Although this is quite positive, it was noteworthy to find that when given the choice between the two delivery modes, classroom and DL, a much higher proportion of members said that they would choose classroom. In fact, approximately seven out of ten members who responded to this question said that they would choose classroom, assuming all other factors remained equal. The qualitative analyses found a wide range of satisfaction levels including members that stated that the CAF DL has much improved over the years.

Variables related to overall satisfaction. The second research question in this study posed the question, "What are the relationships between student satisfaction amongst CAF

Regular Force members regarding their DL experiences and their individual characteristics, their satisfaction of DL course quality, their satisfaction with support, and their general perceptions towards DL?" Correlation and regression analyses were completed between a variety of these variables, and qualitative code frequency analysis and thematic content analysis further added depth to the findings.

Qualitative code frequency analyses were performed and showed that the greatest satisfiers for DL were flexibility and the ability to stay in one's home location. The greatest dissatisfiers, on the other hand, were the lack of meaningful interactions and networking with peers and technological issues.

The three ordinal demographic variables that were tested for correlation, age and years of service and previous experience with DL, all yielded a significant relationship with DL satisfaction, but of a very weak strength.

All course quality variables yielded a significant positive correlation, with a moderate strength, to overall DL satisfaction, with aspects of DL technology yielding the strongest correlation. Two of the major course quality subjects that were highlighted in the integrated results chapter were technology and interactions. Many members discussed the challenges that they encountered with the CAF technology supporting DL. In many instances, members discussed how these challenges led to frustration and decreased their satisfaction with their DL experiences. Members also discussed what they perceived as a lack of meaningful peer and instructor interactions in their DL courses. In many cases within the qualitative data, members linked the lack of meaningful interaction, along with the decreased opportunities for networking in DL, with their decreased overall satisfaction. Factor analysis identified seven different factors. Of these seven factors, regression analysis showed that the course quality factor that was

associated with a lack of satisfaction regarding interactions with classmates was, indeed, the strongest factor that influenced overall DL satisfaction.

Variables related to support, from the Chain of Command, family, and co-workers, all yielded a significant positive correlation, although of a weak strength. Support from the Chain of Command, in relation to time provided and the resulting effects on work/life balance, was found to be a noteworthy consideration affecting DL satisfaction in the CAF. In the qualitative data, members often reported having issues juggling their work, family, and professional development DL courses. One of the factors identified in factor analysis was a support factor. Within this factor, regression analysis showed that support from the Chain of Command was the strongest influencer, of the support measures, on overall DL satisfaction.

Most of the perception statements regarding DL correlation analysis yielded significant relationships to overall DL satisfaction with a weak to moderate strength. Of these seven factors, regression analysis showed that the perceptions about DL factor, specifically associated with the sentiment that positive changes are happening regarding DL (e.g. that the quality of DL has improved and that the CAF is moving in a good direction regarding DL), was the second strongest factor that predicted overall DL satisfaction.

Military-specific considerations affecting DL experiences. The third research question in this study posed, "How do CAF Regular Force members perceive that military service affects their DL experiences?" Findings showed that there are unique experiences and challenges that military members encounter as they pursue their DL. A large proportion of participants agreed that members' DL studies are often significantly disrupted due to military-specific issues such as postings and operations.

The range of experiences discussed that could affect DL experiences included such things as: operational activities; postings to other geographical locations; military exercises; high operational tempo; being in different countries and time zones than classmates and instructors; being in the field, on a ship, or on a submarine without connectivity or reliable and sufficient bandwidth; and juggling other military requirements, such as taskings and courses. Some members suggested that flexibility and alternate options should be provided in consideration of the special requirements CAF members often have in relation to their DL experiences.

Recommendations

The results from this research have led to some recommendations, both to benefit the practice of DL in the CAF and towards furthering research in this area. These recommendations are presented in the following two sections.

CAF DL practice. The findings of this research led to five recommendations for improvement related to the use of DL in the CAF. These recommendations were derived from the results of this research, incorporating the responses of members to the final question of the questionnaire that asked members to share suggestions and recommendations about DL in the CAF. These recommendations have also integrated my own knowledge of the use of DL in the CAF. The five recommendations are as follows:

1. Increasing and/or improving interaction opportunities between peers and instructors in CAF DL should be prioritized to increase student satisfaction. Increasing the level of engagement in forum discussions through thought-provoking questions and prompts by instructors, incorporating virtual classrooms (such as presently available with the Saba virtual classroom), and video or teleconferencing opportunities could increase interactivity, add some interesting variety and further engagement amongst students.

Exploring new and innovative ways to include communities of practice (CoP) where students share and receive peer feedback could decrease the feelings members shared regarding DL being a "solo endeavour." Instructors must have enough support and encouragement to make full use of the available technologies in order to facilitate an increase in online synchronous and asynchronous interactions. Building more interactions into DL could increase students' satisfaction and have the beneficial side effect of building those crucial peer/colleague networks that have the potential to garner career-long benefits, beyond the specific time periods during professional development courses.

2. Effective training and educational technologies supporting CAF DL, including the learning management system, must be accessible in the full range of military activity and it must be robust, user-friendly and well-supported in order to maintain members' satisfaction with their DL experiences. The members' dissatisfaction that was shared in this research concerning these elements of CAF DL emphasize the fact that continuous improvement of these systems would constitute a beneficial effort and investment. The resulting improvements would surely be welcomed by CAF members in pursuit of their professional development by DL.
3. CAF students should have a mandated amount of time provided outside of the normal workplace in line with the time required for effective learning to take place during DL. The Chain of Command should always be made aware that a certain amount of time is required, that regular tasks may need to be delayed or be reassigned, and that it is their responsibility to encourage members to take the time required and prioritise their learning appropriately. The disparity that presently exists between the time provided between

different members, dependent on their particular positions and supervisors, leads to member dissatisfaction and frustration. In order to ensure a positive and effective learning experience, CAF members must be provided time and the use of a quiet learning space, such as at a home office or dedicated workspaces/computer labs on bases. A lack of time provided, and the resulting difficulties maintaining a good work/life balance has shown, in this research through CAF members' personal accounts, to have the potential to cause family issues, mental/physical stress, and hardships.

4. As this research found that all course quality variables significantly and positively correlated to overall satisfaction, since many of the variables were significant influencers on DL satisfaction, and since the qualitative findings supported these relationships, it is recommended that a CAF/DND DL course quality rubric be created that allows for a check-list for all DL courses in the CAF/DND. This could potentially be based on already validated rubric standards, such as with the Quality Matters rubrics that were referred to in Chapter 2 (Quality Matters Rubrics & Standards, n.d.). A standard minimum score could be adopted, and each course would need to pass through this rubric, scored by a group of training experts, prior to the DL course being used across the CAF population. This rubric could incorporate preferred practices in the field and act as an aid to training establishments during the design and development phases of instructional design. Some basic course quality rubric questions could include, for example, "Are the learning objectives [performance and enabling objectives, as used in the CAF training context] clearly stated?," "Are there opportunities within the course for peer interaction?," and "Are the assessment requirements clearly described?" Multidisciplinary teams, including multimedia specialists, instructional designers, and

subject matter experts, should assist in improving course quality for those which fail to meet the quality standards.

5. The CAF must account for the additional military-specific challenges members may face while pursuing DL. CAF members are a unique population undertaking unique activities and, due to this, special considerations are paramount in the design, development and management of DL courses. Flexibility must be built into the course design, with the required technological support, to provide different options ensuring that members can access and complete their training regardless of their present circumstances. Flexibility and understanding, in terms of course deadlines, should be standard when other military obligations and work pressures challenge the members' ability to successfully juggle all their tasks.

Future research. Although the most salient findings of this research were highlighted in the integrated results of Chapter 6 and then summarized in this chapter, the data, which was analyzed inductively in this work, yielded many more points of interest. These additional points were not, in all cases, directly responding to my research questions, however, could be explored in further research. In addition, it was necessary to limit this research to a manageable scope and some decisions had to be made during my research journey as to where I would focus. I would encourage my colleagues and other researchers to use this research as a springboard to explore related areas. As such, four recommendations for future research into DL in the military context are listed below:

1. As this research focused on Regular Force members only, similar research should be conducted with Reserve Force members as the sample. Different challenges exist within this population, such as the potential need to juggle a fulltime job outside the

military in a different context and the possibility of not having fulltime access to a DND workspace on the Defence Wide Area Network (DWAN).

2. This research focused on a specific set of professional development programs and courses. Future similar research could delve into the realm of occupational training that is also offered via DL. The success that the CAF is having with respects to hands-on skill training, often developed with the use of 3D models, along with the success and satisfaction of CAF students for these types of training courses, would be a valuable area of research to explore.
3. Research into how members balance their work, family and educational pursuits and how this could be done better would be beneficial to the CAF's organizational understanding and, in turn, assist CAF members in maintaining a healthy work/life balance.
4. Ongoing research must be done by the CAF to continually keep abreast of evolving preferred DL practices. This should include: 1) observing methodologies and technologies being used by the forward-thinking academic and business organizations that offer DL; 2) creating a technology-watch to observe and assess what new technological capabilities and products are being developed by industry that could help enable the CAF better achieve its training and educational goals; and 3) developing a method for periodic student and instructor evaluations on the topic of DL, including its supporting methodologies and technologies, that would be directed up to central training and educational authorities, in order to help the organization better understand its strengths and weaknesses so that continuous improvement can be effectively pursued.

Concluding Thoughts

According to Canada's Defence Policy *Strong, Secure, Engaged* (2017), the CAF is committed to providing "modern, world-class training" (National Defence, p. 21) to its members. As was shown in the literature review, members' satisfaction with training can have positive learner and organizational outcomes such as readiness to transfer learning, levels of absenteeism, retention, and students' intention to recommend the training to others. Their satisfaction, however, does not necessarily equate quality, nor does course quality necessarily guarantee that every member will be satisfied with their DL experiences. There are many related considerations, such as effectiveness and efficiency of time and cost, that are crucial considerations to the CAF training system. Of great benefit to the CAF training system, there are a multitude of motivated training professionals who work towards continual improvement in these realms every day.

I trust that the findings and recommendations within this research benchmark the CAF's present state concerning DL satisfaction, along with some of the variables that relate to that satisfaction. I hope, as well, that I have painted an accurate descriptive picture of some of the unique challenges that CAF members often face while pursuing their professional development via DL and some of the improvements that could help them to succeed. I have confidence that the recommendations here within could lead to improvements of the status quo in order to improve learner satisfaction within their CAF DL courses. Secondary benefits of this research should include informing the CAF's change management progress in moving away from traditional classrooms to the increased use of DL and identifying DL preferred practices from the CAF members' points of view.

As the use of DL continues to increase, further study will be required to help the CAF training system determine its currency in relation to the evolving technological and methodological advances that may have the potential to better alleviate some of the issues members shared with regards to their DL experiences. It is also crucial to continue to question the optimal mix of DL, classroom and blended learning, both in terms of cost efficiency and in the optimization of members' learning, dependent on the specific objectives of the applicable training and education.

It has been a wonderful opportunity for me to conduct my doctoral research with members of the CAF population as my sample as it is a population of which I am very proud to be a member of myself. It has proven to be a pleasure to hear, read and share the words, experiences, and challenges of my comrades. I sincerely hope that I have fully expressed what was shared with me in a way that respects the members' collective voice. It is my desire that this rich collection of quantitative and qualitative data will add to the body of knowledge in the domain of DL and, specifically, within the military training & education field. It is also my desire that this research will be act as impetus towards further improvement or, as in the motto of the CAF Training Development Officers Branch, that we will continue to be, "Always Seeking a Better Way."

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Appendix A: Phase 1: CAF Distance Learning Satisfaction Survey

Survey Objective

Distance Learning (DL) is becoming a common mode of training delivery in the Canadian Armed Forces (CAF). We are interested to learn more about CAF learners' overall satisfaction with their DL experiences with CAF courses, their satisfaction with regards to certain aspects of their DL experiences and their overall perceptions of DL.

Background

Military Personnel Generation (MPG) is interested in determining CAF members' levels of satisfaction and perceptions regarding DL and to measure satisfaction levels in relation to other factors. In support of this objective, the Director General Military Personnel Research and Analysis (DGMPRA) is investigating factors in relation to DL satisfaction across a variety of CAF DL courses. This project is being completed as a portion of the doctoral research towards the completion of a dissertation on this topic by Major Kim Jones, a Training Development Officer.

Your Participation

As a CAF member who has taken a CAF DL course, your participation in this survey is important to us and we hope that you will take this opportunity to share your views, your opinions, and provide us with feedback on your experiences with DL in the CAF. If you choose to participate, we encourage you to complete the survey honestly and to complete as much of it as you are comfortable with. Your participation will ensure that your voice and your concerns are heard. As DL becomes more common as a mode of delivery in the CAF, MPG and the CAF training system, at large, will benefit from a better understanding of what is working well and which areas require improvement. You may decide to terminate this survey at any point during its completion.

Time Commitment

The survey will take approximately 20 minutes to complete but this may vary depending on the level of feedback you provide.

ATIP Considerations

The Access to Information Act and the Privacy Act entitles Canadian citizens, permanent residents of Canada and individuals or corporations currently present in Canada to obtain copies of research reports and research information held in federal government files. Prior to releasing any information, the Director Access to Information and Privacy screens the information to ensure that the identities of individuals are not disclosed.

Confidentiality

Even though this survey is anonymous, the information collected will be kept strictly confidential. No information that could directly identify you as an individual participant will be stored with the dataset. While there is the remote possibility that someone might be able to deduce your identity based on some combination of the demographic questions,

all individual level information will be kept strictly confidential and will be stored in a secure manner.

Questions/Concerns

Any information about your rights as a participant or any questions or concerns about the research may be addressed to:

Major Kim Jones
Training Development Officer
613-943-1017
Kimberly.Jones@forces.gc.ca

If you are experiencing technical difficulties with the survey, please refresh the page or try again later. If you continue to have problems, please contact the lead researcher, Major Kim Jones, at Kimberly.Jones@forces.gc.ca.

This survey has been approved and coordinated through the DGMPRA Social Science Research Review Board, in accordance with DAOD 5062-0 and DAOD 5062-1. Approval Number: SSRRB **1696/17F.** Athabasca University Research Ethics Board (AUREB) File Approval Number: **22925**.

Informed Consent

By completing this survey you consent to participate and your responses will be saved as you progress. You may withdraw that consent at any time by advancing to the last page of the survey and indicating that you no longer wish to participate and have your responses used.

Acceptance

Your decision to continue with this web based survey indicates that you:

1) understand to your satisfaction the information provided to you about your participation in this research project, and
2) agree to participate in this research.

In no way does this waive your legal rights nor release the researcher, sponsors, or involved institutions from their legal and professional responsibilities.

I consent to participate in this study
I do not consent to participate in this study

Instructions:

In this survey, questions will be asked to you that will refer to your experiences in a particular CAF Distance Learning course or program. For these questions, please focus your answers on the course or program that you have finished, since 1 Jan 2015, from the list below. This may have been completed entirely by distance learning or may have been a hybrid course (distance

learning and classroom). For hybrid courses, please focus on the distance learning portion of the course.

Applicable courses/ programs:

- Canadian Armed Forces Junior Officer Development (CAFJOD)
- Non-Commissioned Member Professional Development (NCMPD) – Primary Leadership Qualification (PLQ)
- NCMPD - Intermediate Leadership Program (ILP)
- NCMPD - Advanced Leadership Program (ALP)
- NCMPD – Senior Leadership Program (SLP)
- NCMPD – Senior Appointment Program (SAP)
- Joint Command Staff Program (JCSP)

Please note that in this research **satisfaction is defined as the positive feeling a learner has when their expectations have been met with regards to their cognitive and affective needs for their training and/or educational experience.

1. Using the scale below, and focusing on the applicable aforementioned CAF course/ program, please rate how satisfied you were with your CAF distance learning experience overall. (1-A)

①	②	③	④	⑤	⑥
Very dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied	Not Applicable

2. Using the scale below, and focusing on the applicable aforementioned CAF course/ program, please rate how satisfied you were with each of the following factors of course quality:

①	②	③	④	⑤	⑥	
Very dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied	Not Applicable	
a) Clear learning objectives						(2-A)
b) Effective communications with instructor						(2-B)
c) Interactions with classmates						(2-C)
d) Feelings of being part of a learning community						(2-D)
e) Collaborative group work with classmates						(2-E)
f) Engaging course content						(2-F)
g) Easily accessible required course materials						(2-G)

h) Clearly described course assessments	(2-H)
i) Constructive feedback from instructors on assignments and assessments	(2-I)
j) Timely feedback from instructors on assignments and assessments	(2-J)
k) Effective course technology (e.g. Defence Learning Network)	(2-K)
l) Course materials provided that helped to reach course objectives	(2-L)
m) Course technology that helped to reach course objectives	(2-M)

3. Using the scale below, and focusing on the applicable aforementioned CAF course/ program, please rate how satisfied you were with each of the following factors of support:

①	②	③	④	⑤	⑥	
Very dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied	Not Applicable	
a) Support you received from your Chain of Command during your DL program/ course						(3-A)
b) Support that you received from your family during your DL program/ course						(3-B)
c) Support you received from your co-workers during your DL program/ course						(3-C)

4. Please comment on the time you were given during working hours for your DL program/ course.

(4-A)

5. Please comment on any specific issues you experienced with regards to support from the Chain of Command, your family, and/or your co-workers during your DL program/ course.

(5-A)

6. Using the scale below, please rate your level of agreement with the following statements pertaining to DL in the CAF overall:

①	②	③	④	⑤	⑥
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Not Applicable

a) The convenience and flexibility of DL courses are beneficial to CAF members.	(6-A)
b) The CAF relies heavily on DL for training and education.	(6-B)
c) CAF members build less social networks due to the increase in DL.	(6-C)
d) The increasing move to DL by the CAF represents a significant cost reduction in training.	(6-D)
e) DL learners miss out on valuable group discussions due to not being physically face-to-face.	(6-E)
f) CAF members who are DL learners are often required to complete their studies while continuing to be responsible for their normal position workload.	(6-F)
g) Establishing "Learning Contracts" to be signed by CAF members and their supervisors assigning permitted hours per week for the DL course should be a requirement for all learners of DL courses.	(6-G)
h) The new generations of CAF members prefer DL over classroom courses.	(6-H)
i) DL learners have more reading to do than learners who are physically together in a classroom.	(6-I)
j) DL in the CAF is higher quality than DL offered by civilian schools (e.g. universities, colleges).	(6-J)
k) The CAF is moving in a good direction by increasing the use of DL.	(6-K)
l) The quality of DL in the CAF has increased over the past ten years.	(6-L)
m) DL courses often cause feelings of isolation.	(6-M)
n) Older CAF members dislike DL.	(6-N)
o) CAF members suffer from a lack of face-to-face mentoring due to the increase in DL.	(6-O)
p) DL courses add extra difficulties not associated with traditional classroom courses.	(6-P)
q) Students learn more during DL courses than in traditional classrooms.	(6-Q)
r) Students are more likely to do the required readings in a DL course than in a traditional classroom course.	(6-R)
s) Self-motivation is often a problem in DL courses.	(6-S)

t) Students take more time to formulate their thoughts in online forum discussions and, therefore, responses are more meaningful.	(6-T)
u) DL increases academic dishonesty (e.g. cheating, plagiarism).	(6-U)
v) DL increases the chance of burn-out for CAF members.	(6-V)
w) DL studies are often significantly disrupted due to military-specific issues such as postings and operations.	(6-W)
x) A lack of comfort with computer technology and Internet use makes DL harder for many CAF members than a traditional in-class course.	(6-X)
y) Increased use of DL by the CAF increases the quality of life of CAF members due to decreasing the requirements to travel for courses.	(6-Y)
z) The CAF has good technical support systems in place to help should any technical problems arise during DL courses.	(6-Z)

7. Have any military-specific factors affected, either positively or negatively, any of your DL experiences in the CAF? If so, how? For example, you could consider the types of jobs you have held, missions, availability of technology, postings, etc.

(7-A)

8. Have these factors had any effect on your satisfaction or dissatisfaction with any of your CAF DL experiences?

(8-A)

9. What were your greatest satisfiers regarding your CAF DL experiences?

(9-A)

10. What were your greatest dissatisfiers regarding your CAF DL experiences?

(10-A)

11. What do you think the CAF could do to increase the satisfaction levels of CAF members with regards to DL courses?

(11-A)

12. If you were to enroll yourself in a professional development course and had to choose between DL or an in-class course, with all other factors being equal (e.g., time provided, effort required), which would you choose?

❑ DL ❑ Classroom (12-A)

13. What is the main reason for your choice in the previous question?

(13-A)

Individual Characteristics Information

The following information will be used to view differences between groups, such as rank group and years of service. We remind you that your responses will not be shared with your Chain of Command and that all responses will be confidential and remain anonymous. Feel free to skip questions that you are not comfortable answering.

14. Rate your previous experience with Distance Learning: (14-A)

❑ Rather inexperienced (only took one course)
❑ Somewhat experienced (took several courses)
❑ Very experienced (took many courses, perhaps completed a diploma or degree online)

15. What is your rank group? (15-A)

❑ Junior NCM	❑ Senior NCM	❑ Junior Officer	❑Senior Officer

16. How many years have you served in the CAF?

(16-A)

17. What is your age?

(17-A)

18. Are you: (18-A)

❑ Male ❑ Female ❑ Another Gender Identity

19. What is your First Official Language? (19-A)

❑ English ❑ French

20. Please feel free to add any other comments/suggestions/recommendations about CAF members' experiences with distance learning in the CAF: (20-A)

PLEASE READ THE FOLLOWING CAREFULLY

Please confirm your approval to use your anonymous responses for the CAF Distance Learning Satisfaction Survey report and DND/CAF research purposes:

Yes, use my responses
No, do not use my responses

Thank you for your participation!

*** Phase 2 of this research will include a series of follow-up interviews and for this, I request your assistance. If you would like to further share your experiences regarding distance learning in the CAF, please contact me, Major Kim Jones, at Kimberly.Jones@forces.gc.ca.

Include which program/ course you have completed in the past three years from the initial list presented and your contact information. The interview will last approximately 30 - 60 minutes and will take place in person in the NCR or via videoconference.

I would very much appreciate your additional input and support for this research. The CAF training system will benefit from a better understanding of what is working well in distance learning programs and the areas in which we still have room to improve.

Appendix B: Phase 2: Semi-Structured Interview –Moderator's Guide

MODERATOR'S GUIDE

Satisfaction of Canadian Armed Forces Regular Force Members with their Distance Learning Experiences

Total participant time required: 30-60 minutes

The purpose of the research is to learn more about CAF learners' overall satisfaction with their DL experiences with CAF courses and their satisfaction with regards to certain aspects of their DL experiences, such as the support they received and their perceptions of the course(s) quality. This research will inform the training system of CAF members' overall satisfaction with their DL experiences to help better identify areas of improvement. Below is a general guide for leading a focus group/interview.

1. **Consent**

   - Before the group/interview begins conduct the informed consent process.

2. **Introduction**

   - Welcome participant(s) and introduce myself;
   - Explain the general purpose of the discussion and why/how the participants were chosen;
   - Explain the presence and purpose of audio recording equipment;
   - Outline general ground rules and interview guidelines, such as that participants can end the interview at any time they want or exercise their right to not answer any question(s);
   - Address the issue of privacy and confidentiality;
   - Inform the participant that information discussed is going to be analyzed as a whole and that participants' names will not be used in any analysis of the discussion

3. **Interview Guidelines**

   This <u>semi-structured</u> interview will consist of 15 question(s) but we can feel free to allow the discussion to flow in related areas. During the interview I may ask you additional questions to further clarify or elaborate your answer. You may choose not to answer a particular question, in that event please feel free to inform me.

   Your answers and any information identifying you as a participant of this research will be kept confidential. As discussed, I will be audio recording the discussion to ensure that we have captured and transcribed the responses accurately. I will confirm the transcriptions with you and then destroy the audio file after the report is written.

   Do you have any questions for me, before we begin?

4. Interview Questions (as below)

1. Gender
2. Age
3. Rank
4. First Official Language
5. How many and which military DL courses have you completed?
6. How satisfied were you overall with your DL experiences in the CAF?
7. Did you feel comfortable with the DL aspect of the course? Including the use of technology?
8. Could you share your experiences with some of the following quality factors of the DL course(s) you took? (Prompt following quality factors)
    a. presence of clear learning objectives?
    b. effective learner interactions with their instructor?
    c. effective learner interactions with other learners? (if applicable)
    d. effective learner interactions with the content?
    e. effective learning resources available?
    f. effectiveness of learner assessments?
    g. effective and supported course technologies/ technical challenges/ Defence Learning Network/ Learning Management System?
9. Could you share your experiences with some of the following external factors related to your DL course(s)? Prompt these factors:
    a. Support from the Chain of Command
    b. Support from Family
    c. Support from Co-workers
    d. Sufficient time available to devote to DL studies
    e. Effect on work/life balance
10. What are your general thoughts and perceptions regarding DL? (Give prompts regarding culture of DL in CAF, positives and negative aspects, generational factors, CAF direction with regards to DL use)
11. Do you think there are military-specific factors that affect students' experiences with DL in the CAF (e.g. postings, deployments, high work tempo)?
12. Are there any specific experiences that you have had with DL in the CAF that you would like to share in order to demonstrate further the answers you have already given?
13. Were some courses more positive or negative than the others? Why? What could have been done, in your opinion, to improve upon these experiences?
14. Generally speaking, what could the CAF do differently or improve upon in order to improve CAF members' experiences with DL?
15. Is there anything else you would like to share regarding your satisfaction with your CAF DL learning experience?

5. Closing: (5 m)

When ending the interview make sure to:

- state closing remarks;
- reiterate privacy and confidentiality considerations; and
- thank the participant.

Appendix C: Interview Consent Form

INTERVIEW CONSENT FORM

Satisfaction of Canadian Armed Forces Regular Force Members with their Distance Learning Experiences

Purpose of the Study

The purpose of the research is to learn more about CAF learners' overall satisfaction with their DL experiences with CAF courses and their satisfaction with regards to certain aspects of their DL experiences, such as the support they received and their perceptions of the course(s) quality. This research will inform the training system of CAF members' overall satisfaction with their DL experiences to help better identify areas of improvement.

SSRRB Approval Number

This research project has been approved by the DGMPRA Social Science Research Review Board, in accordance with DAOD 5062-0 and 5062-1. The SSRRB approval # is **1696/17F**. Athabasca University Research Ethics Board (AUREB) File Approval Number: **22925**.

Participation

Your participation is completely voluntary and you have a choice at every stage to end your participation without reprisal or career repercussions. The Interview will be a duration of approximately 30-60 minutes. The researcher(s) will keep your responses confidential and will protect your anonymity in any reports or publications.

Risks

The risks involved in participating in this study are assessed as minimal. Due to the nature of the research, your participation in this study will require that you answer questions in which you talk about your personal experiences or provide information; but there is no anticipated risk or discomfort associated with the questions.

You are not required to respond to any question that you are not comfortable with and, should you choose not to respond, there will be no negative consequences for you.

Information You Provide

Information derived from any transcription will be stored on the researcher's computer and secured by a password. Your participation in this interview will include a voice recording.

The information collected will be kept strictly confidential, and will only be shared with members of the research team and the Department of National Defence. No information that will directly identify you as an individual participant will be collected in the interview or stored with the dataset. While there is the remote possibility that someone might be able to deduce your identity based on some combination of the demographic questions, all individual level information will be kept strictly confidential. Source documentation will be destroyed after 5 years.

ATIP Considerations

The *Access to Information Act* and the *Privacy Act* entitles Canadian citizens, permanent residents of Canada and individuals or corporations currently present in Canada to obtain copies of research reports and research information held in federal government files. Prior to releasing any information, the Director Access to Information and Privacy screens the information to ensure that the identities of individuals are not disclosed.

Questions/Concerns

Any information about your rights as a research participant may be addressed to Major Kim Jones, 613-943-1017. You may verify the authenticity of the research by contacting: Dr. Susan Moisey, doctoral supervisor at Athabasca University, 1-866-403-7426, susanh@athabascau.ca.

What if You Change Your Mind About Participating?

You may withdraw from the study at any time without penalty – participation is completely voluntary. If you decide you no longer wish to take part after you have provided information, the information will be removed from consideration prior to the data analysis.

Acceptance

Your signature on this form indicates that you 1) understand the information provided to you about your participation in this research project, and 2) agree to participate in this research.

In no way does this waive your legal rights nor release the researcher, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from this research project at any time. You should feel free to ask for clarification or new information throughout your participation.

Name (please print)	Signature	Date
Participant:		
Researcher:		

Appendix D: Letter of Invitation

LETTER OF INVITATION:

Dear **CAF learner**

My name is Major Kim Jones and I am conducting research for MILPERSGEN and as partial fulfilment of my own doctoral studies. The purpose of this research is to learn more about CAF learners' overall satisfaction with their Distance Learning (DL) experiences as well as with certain aspects of their DL experiences, such as the quality of the DL course(s) and the support they received during their studies. This letter is to ask you to participate in my research project *Satisfaction of Canadian Armed Forces Regular Force Members with their Distance Learning Experiences*.

The objective of this research is to inform the training system of CAF members' overall satisfaction with their DL experiences, to understand the factors that contribute to their satisfaction and to identify areas of improvement. This research will be conducted through an online survey. It consists of questions on a five-point Likert scale, multiple-choice style questions and open-ended questions where you can share your opinions and provide more details regarding your experiences. The survey is estimated to take 30 minutes of your time. This research has been approved by the DGMPRA Social Science Research Review Board, in accordance with DAOD 5062-0 and 5062-1 and is being overseen by DRDC Toronto. The SSRRB approval # is **1696/17F**. Athabasca University Research Ethics Board (AUREB) File Approval Number: **22925**.

You do not have to identify yourself on the survey or to answer any questions that you do not wish to. The information you provide will be summarized, in anonymous format, in the body of the final report. At no time will any specific comments be attributed to you. All source documentation will be kept strictly confidential. In addition to submitting my final report to Athabasca University, for my own doctoral studies, I will also be sharing my research findings with the Department of National Defence.

At the end of the survey is a request for volunteers to be interviewed so I can obtain more detailed information about your satisfaction with your DL experiences. If you are willing to be interviewed, please send me an e-mail and we will make arrangements for the interview either in person in the NCR or by videoconference.

You are not compelled to participate in this research project. If you do choose to participate, you are free to withdraw at any time without prejudice. Similarly, if you choose not to participate, this information will also be maintained in confidence.

I am available to answer any questions you have about the study. You may contact me at 613-943-1017 or Kimberly.Jones@forces.gc.ca or my doctoral supervisor, Dr. Susan Moisey at Athabasca University, 1-866-403-7426, susanh@athabascau.ca.

If you would like to participate, please follow the link provided to the online survey.

Thank you in advance for your valued contribution to this research.

Sincerely,

Major Kim Jones
Training Development Officer
613-943-1017
Kimberly.Jones@forces.gc.ca

Appendix E: Memorandum of Understanding with DND/ DGMPRA

4145-1 (DGMPRA)

4 December 2017

MEMORANDUM OF UNDERSTANDING BETWEEN DIRECTOR GENERAL MILITARY PERSONNEL RESEARCH AND ANALYSIS / DIRECTOR PERSONNEL GENERATION RESEARCH SECTION AND
Major Kim Jones
FOR COLLABORATIVE RESEARCH ENTITLED
"SATISFACTION OF CANADIAN ARMED FORCES MEMBERS WITH THEIR DISTANCE LEARNING EXPERIENCES"

References: A. SSRRB Meeting 21 Nov 2017
B. Meeting Dr. Tzveta Dobreva-Martinova/Dr. Joy Klammer 22 Nov 2017
C. Email Colin Mombourquette/Major Kim Jones 22 Nov 2017

INTRODUCTION

1. The use of Distance Learning (DL), as a training and education delivery method, has been on the rise within the Canadian Armed Forces (CAF) as a way of optimizing funding to the training system while still maintaining a high standard. The Individual Training & Education (IT&E) Modernization Strategy (2011) called for a modernized CAF IT&E system that was agile, integrated, and responsive to the contemporary environment and CAF institutional requirements. The CAF Campus Operational Framework (2013) further called for the increase of ubiquitous and asynchronous access to learning. Increasing use of DL is one way in which these goals can be achieved. In order to ensure students' success, interest, and knowledge retention, quality training and support must be maintained. Through her doctoral research, Major Jones aims to help the CAF better understand the members' overall satisfaction with their DL experiences, as well as different factors that affect their level of satisfaction.

2. IAW references, Major Kim Jones, currently registered in the Doctor of Education (EdD) program at the Centre for Distance Education of Athabasca University, will contribute to the Director General Military Personnel Research and Analysis (DGMPRA)/Director Research Personnel Generation (DRPG) Individual Training and Education projects. Major Jones intends to distribute surveys and conduct interviews with CAF members. She will conduct her research under the supervision of Dr. Susan Moisey, an Associate Professor in the Centre for Distance Education at Athabasca University. Major Jones' project is internally sponsored by Military Personnel Generation, is being overseen by Dr. Jerzy Jarmasz of Defence Research and Development Canada (DRDC) Toronto, and has received approval in the Public Opinion Research (POR) program.

3. Major Jones intends to gather quantitative and qualitative data through the distribution of surveys and the conduct of interviews. Her research will explore: (1) CAF member's satisfaction with their DL experiences; (2) the significance of various factors in relation to satisfaction (e.g. support, course quality, individual characteristics); and (3) members' perceptions regarding the effects of military service on their DL experiences.

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4. The aim of this Memorandum of Understanding (MOU) is to outline the conditions under which DGMPRA will support this research and to outline the responsibilities of the signatories.

RESPONSIBILITIES

5. DGMPRA/DRPG.

   a. Data. Upon approval of the project by the SSRRB, the DGMPRA Methodologist will provide the required data for the identified sampling frame, including email addresses and required research variables.

   b. Survey Support. DGMPRA will provide survey support, through the DGMPRA survey support team, by:

      1) The development of final English and French versions of the survey in the SNAP software;
      2) Monitoring the performance of the on-line survey during the data collection phase and providing the researcher with periodic updates concerning response rates; and
      3) Once data collection has ceased, providing the researcher with an SPSS data file.

   c. Translation. DGMPRA administrative staff will request an official French translation of the final survey after approval of the final English version by the SSRRB.

   d. Research Report. In addition to her doctoral dissertation, Major Jones will produce a report (e.g., scientific letter or scientific report) summarizing her research and findings. DGMPRA/DRPG will provide available documentation required to assist in the preparation of this report (e.g., a copy of DGMPRA Publication Guidelines, etc.), and will provide feedback, as required, on any reports produced.

6. Major Kim Jones. Under the supervision of Dr. Susan Moisey, Associate Professor at the Centre for Distance Education of Athabasca University, Major Jones will be responsible for:

   a. Research Proposal. Major Kim Jones will present the research proposal to Dr. Jarmasz of DRDC TO for review and feedback. Major Jones will also present the proposal to the SSRRB for review and approval. The proposal must be approved by Major Jones' doctoral dissertation committee and the Athabasca University Ethics committee prior to any data collection.

   b. Data. Major Kim Jones will be responsible for:

1) providing to the survey support team a copy of the final, SSRRB-approved survey with variable names (16 or fewer alphanumeric characters);

2) emailing survey requests and reminders to the sample;

3) forwarding electronic copies of all data files created to DGMPRA/DRPG; and

4) forwarding her doctoral dissertation, the DGMPRA scientific letter/report, and any subsequent reports/articles that make use of DGMPRA/DRPG provided data.

TIMELINES

7. Major Jones intends to complete her dissertation and defence by the end of May, 2019. The present MOU will, therefore, be in effect until August 2019. However, this MOU may be extended with the mutual written consent of the signatories.

TREATMENT OF DATA

8. Any data are delivered under the understanding that they will be used solely for the purposes stated herein and detailed in the research proposal. Further, they may not be delivered, lent, conveyed to, or shared with, any other person except for the purpose of fulfilling the engagements contained in this MOU.

9. To ensure that the identities of respondents and the units in which they have served are protected, the researcher has to ensure the confidentiality and the anonymity of the data. For example, the researcher will not present any information or results that identify, or could be recognized, as a specific person or unit. The data's confidentiality will be protected to the extent permissible under Canadian laws.

INTELLECTUAL PROPERTY

10. All data required for this MOU remains the property of the CAF/DND. The researcher will only use the data for academic research purposes and will secure the data in accordance with the CAF/DND standards. DGMPRA/DRPG is unrestricted in its use of the data.

11. This MOU authorizes the use of data for publication in the doctoral dissertation only. The author of the report is permitted to use the acquired data for academic purposes only (e.g., providing copies to academic committees, or to make reference to the data in academic publications).

12. Prior to publication or presentation of the data for any purpose beyond that stated in this MOU (e.g. academic journal publication), Major Jones will seek permission from DGMPRA/DRPG and submit to DGMPRA/DRPG a copy of all drafts for approval prior to publishing or presenting.

13. A disclaimer must be included in all published materials that the opinions expressed in the publication (whether electronic, paper, or presentation) reflect the opinion of the author(s) and do not necessarily represent the opinion of the Canadian Armed Forces or the Department of National Defence.

ACKNOWLEDGEMENT OF DGMPRA/DRPG CONTRIBUTION

14. All use of DGMPRA/DRPG data in any thesis or publication will be suitably acknowledged in the text.

SIGNATURES

Major Kim Jones, EdD Student
Athabasca University

22 Dec 2017
(Date)

Dr. Susan Moisey (Supervisor)
Associate Professor & MEd Program Director
Athabasca University

December 22, 2017
(Data)

Ms. Eugenia Kalantzis
Director Research Personnel Operations
DGMPRA

8 Dec 2017
(Date)

Appendix F: Overview of Courses/Programs Completed by Sampling Frame

The sampling frame in this research was composed of CAF Regular Force Members who had completed one of the following seven courses/programs in approximately the three years prior to completing the questionnaire. Some of these programs are delivered solely through DL and some are delivered through blended learning, that is, DL with a residential portion. Below is a short overview of each of these programs.

Canadian Armed Forces Junior Officer Development (CAFJOD)

The CAFJOD is a program of seven modules which are delivered solely by DL delivered through the DLN. All Junior Officers, both Regular and Reserve Forces, are required to complete this program during the Developmental Periods 1 and 2 and prior to being promoted to the rank of Major/Lieutenant-Commander. The aim of this program is to expose Junior Officers to the foundational and standardized knowledge that will be required to be effective in their military duties. The seven modules of this program include: 1) Staff Duties; 2) Enable the Fighting Force; 3) Law and Military Justice; 4) Leadership and Ethics; 5) Joint Operations; 6) Canadian Military History; and 7) Support the Institution (National Defence and Canadian Armed Forces, 2018).

Joint Command and Staff Programme (JCSP) – DL

JCSP is a program that is offered through the Canadian Forces College in Toronto, ON. It is offered in a one academic year full-time residency format or through a two academic years part-time DL format. It is offered during Developmental Period 3, normally during the rank of Major/Lieutenant-Commander. The aim of this program is to prepare selected officers for command and/or staff positions in a variety of national and international settings. Some of the common courses within this program include: 1) Planning at the Operational Level; 2)

Component Capabilities; 3) Leadership; 4) Command; and 5) Security and International Affairs (Canadian Forces College, 2018).

Non-Commissioned Member Professional Development (NCMPD) – Primary Leadership Qualification (PLQ)

The PLQ is a qualification course that is offered in two modules. The DL portion is offered through the Canadian Forces Leadership and Recruit School (CFLRS) in Saint-Jean-sur-Richelieu, Quebec. This is followed by a residential phase which is offered at different military training establishments across the country. The DL portion is considered to be equivalent to nine days of instruction, to be completed normally over a period of 5 weeks. This course, including the residential phase, is intended for members at the rank of Corporal/Leading Seaman and must be completed prior to appointments to the substantive rank of Master Corporal/Master Seaman. The aim of this course is to build leadership skills by providing required foundational skills and knowledge. The nine performance objectives for the DL portion of the course include: 1) Lead Subordinates; 2) Maintain Good Order and Discipline; 3) Maintain Well-Being of CAF Members; 4) Develop Subordinates; 5) Lead the Institution; 6) Manage Personnel, Financial and Material Resources; 7) Apply Written and Verbal Communication Skills; 8) Instruct Personnel; and 9) Enforce Range Safety (Canadian Forces Leadership and Recruit School, 2018).

NCMPD – Intermediate Leadership Programme (ILP)

The ILP is a program offered through the Osside Institute in Saint-Jean-sur-Richelieu, Quebec, and it prepares NCMs for the roles associated with the rank of Warrant Officer/Petty Officer, 1st Class. It is delivered through a 10-week DL portion followed by a three-week residential portion. The goal of the course is to provide members at this rank level with a good understanding of the CAF and how it fits within their society and world at large. The course also

builds upon communication skills such as structuring a good argument based on facts and relevant references (Royal Military College Saint-Jean – Intranet – Osside Institute, 2018).

NCMPD - Advanced Leadership Programme (ALP)

The ALP is a program offered through the Osside Institute in Saint-Jean-sur-Richelieu, Quebec, that prepares NCMs for the leadership, staff and advisory roles associated with the rank of Master Warrant Officer/Chief Petty Officer, 2nd Class. The course focuses on the duty areas of a member in this rank at the sub-unit and unit level. The ALP is currently being delivered solely by DL. (Royal Military College Saint-Jean – Intranet – Osside Institute, 2018).

NCMPD – Senior Leadership Programme (SLP)

The SLP is a program offered through the Osside Institute in Saint-Jean-sur-Richelieu, Quebec, that prepares NCMs for the leadership, staff and senior advisory roles associated with the rank of Chief Warrant Officer/Chief Petty Officer, 1st Class. It prepares members of this rank to take responsibilities at the higher institutional level that go beyond a member's specific occupation, such as building a strong Officer-NCM team. This program is delivered through a DL portion followed by a residency portion (Royal Military College Saint-Jean – Intranet – Osside Institute, 2018).

NCMPD – Senior Appointment Programme (SAP)

The SAP is the highest professional development level for an NCM and is a program offered through the Osside Institute in Saint-Jean-sur-Richelieu, Quebec. It further prepares those at the rank of Chief Warrant Officer/Chief Petty Officer, 1st Class for the leadership, staff and senior advisory roles associated with senior appointments. This program is delivered through a DL portion and then followed by a residential phase (Royal Military College Saint-Jean – Intranet – Osside Institute, 2018).

Appendix G: Athabasca University Research Ethics Board Certificate of Approval

Athabasca University
RESEARCH CENTRE

CERTIFICATION OF ETHICAL APPROVAL

The Athabasca University Research Ethics Board (AUREB) has reviewed and approved the research project noted below. The AUREB is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS) and Athabasca University Policy and Procedures.

Ethics File No.: **22925**

Principal Investigator:
Ms. Kim Jones, Graduate Student
Centre for Distance Education\Doctor of Education in Distance Education

Supervisor:
Dr. Susan Moisey (Supervisor)

Project Title:
Satisfaction of Canadian Armed Forces Regular Force Members with their Distance Learning Experiences

Effective Date: March 08, 2018 **Expiry Date**: March 07, 2019

Restrictions:

Any modification or amendment to the approved research must be submitted to the AUREB for approval.

Ethical approval is valid *for a period of one year*. An annual request for renewal must be submitted and approved by the above expiry date if a project is ongoing beyond one year.

A Project Completion (Final) Report must be submitted when the research is complete *(i.e. all participant contact and data collection is concluded, no follow-up with participants is anticipated and findings have been made available/provided to participants (if applicable))* or the research is terminated.

Approved by: **Date:** March 8, 2018

Connie Blomgren, Chair
Centre for Distance Education, Departmental Ethics Review Committee

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Athabasca University Research Ethics Board
University Research Services, Research Centre
1 University Drive, Athabasca AB Canada T9S 3A3
E-mail rebsec@athabascau.ca
Telephone: 780.675.6718

Appendix H: Frequencies and Percentages of Individual Variables

To further display the individual frequencies and percentages of the Likert Scale responses to question 2, 3, and 6 in Appendix A, this appendix presents responses for satisfaction with course quality variables and support variables, as well as levels of agreement with the various perception statements.

Table H1

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Clear Learning Objectives

Responses	Frequency	Percentage	(n=367)
Very Dissatisfied	4	1.1%	
Somewhat Dissatisfied	22	6.0%	
Neither Satisfied nor Dissatisfied	17	4.6%	
Somewhat Satisfied	117	31.9%	
Very Satisfied	207	56.4%	

Table H2

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Effective Communications with Instructor

Responses	Frequency	Percentage	(n=366)
Very Dissatisfied	17	4.6%	
Somewhat Dissatisfied	29	7.9%	
Neither Satisfied nor Dissatisfied	32	8.7%	
Somewhat Satisfied	79	21.6%	
Very Satisfied	160	43.7%	
Not Applicable	49	13.4%	

Table H3

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Interactions with Classmates

Responses	Frequency	Percentage	(n=364)
Very Dissatisfied	24	6.6%	
Somewhat Dissatisfied	40	11.0%	
Neither Satisfied nor Dissatisfied	49	13.5%	
Somewhat Satisfied	94	25.8%	
Very Satisfied	96	26.4%	
Not Applicable	61	16.8%	

Table H4

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Feelings of Being Part of a Learning Community

Responses	Frequency	Percentage	(n=368)
Very Dissatisfied	37	10.1%	
Somewhat Dissatisfied	49	13.3%	
Neither Satisfied nor Dissatisfied	77	20.9%	
Somewhat Satisfied	98	26.6%	
Very Satisfied	81	22.0%	
Not Applicable	26	7.1%	

Table H5

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Collaborative Group Work with Classmates

Responses	Frequency	Percentage	(n=365)
Very Dissatisfied	33	9.0%	
Somewhat Dissatisfied	51	14.0%	
Neither Satisfied nor Dissatisfied	72	19.7%	
Somewhat Satisfied	74	20.3%	
Very Satisfied	63	17.3%	
Not Applicable	72	19.7%	

Table H6

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Engaging Course Content

Responses	Frequency	Percentage	(n=365)
Very Dissatisfied	20	5.5%	
Somewhat Dissatisfied	32	8.8%	
Neither Satisfied nor Dissatisfied	52	14.2%	
Somewhat Satisfied	134	36.7%	
Very Satisfied	126	34.5%	
Not Applicable	1	0.3%	

Table H7

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Easily Accessible Required Course Material

Responses	Frequency	Percentage	(n=367)
Very Dissatisfied	17	4.6%	
Somewhat Dissatisfied	39	10.6%	
Neither Satisfied nor Dissatisfied	28	7.6%	
Somewhat Satisfied	105	28.6%	
Very Satisfied	174	47.4%	
Not Applicable	4	1.1%	

Table H8

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Clearly Described Course Assessments

Responses	Frequency	Percentage	(n=367)
Very Dissatisfied	5	1.4%	
Somewhat Dissatisfied	24	6.5%	
Neither Satisfied nor Dissatisfied	26	7.1%	
Somewhat Satisfied	108	29.4%	
Very Satisfied	197	53.7%	
Not Applicable	7	1.9%	

Table H9

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Constructive Feedback from Instructors on Assignments and Assessments

Responses	Frequency	Percentage	(n=367)
Very Dissatisfied	13	3.5%	
Somewhat Dissatisfied	34	9.3%	
Neither Satisfied nor Dissatisfied	25	6.8%	
Somewhat Satisfied	68	18.5%	
Very Satisfied	180	49.0%	
Not Applicable	47	12.8	

Table H10

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Timely Feedback from Instructors on Assignments and Assessments

Responses	Frequency	Percentage	(n=368)
Very Dissatisfied	9	2.4%	
Somewhat Dissatisfied	23	6.3%	
Neither Satisfied nor Dissatisfied	24	6.5%	
Somewhat Satisfied	84	22.8%	
Very Satisfied	175	47.6%	
Not Applicable	53	14.4%	

Table H11

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Effective Course Technology (e.g. DLN)

Responses	Frequency	Percentage	(n=366)
Very Dissatisfied	25	6.8%	
Somewhat Dissatisfied	53	14.5%	
Neither Satisfied nor Dissatisfied	43	11.7%	
Somewhat Satisfied	122	33.3%	
Very Satisfied	121	33.1%	
Not Applicable	2	0.5%	

Table H12

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Course Materials Provided that Helped to Reach Course Objectives

Responses	Frequency	Percentage	(n=367)
Very Dissatisfied	6	1.6%	
Somewhat Dissatisfied	24	6.5%	
Neither Satisfied nor Dissatisfied	39	10.6%	
Somewhat Satisfied	129	35.1%	
Very Satisfied	166	45.2%	
Not Applicable	3	0.8%	

Table H13

Frequencies and Percentages of Likert Scale Responses to Question of Satisfaction Regarding Course Technology that Helped to Reach Course Objectives

Responses	Frequency	Percentage	(n=368)
Very Dissatisfied	21	5.7%	
Somewhat Dissatisfied	42	11.4%	
Neither Satisfied nor Dissatisfied	48	13.0%	
Somewhat Satisfied	117	31.8%	
Very Satisfied	137	37.2%	
Not Applicable	3	0.8%	

Table H14

Frequencies and Percentages of Likert Scale Responses to Question Regarding CAF Members Satisfaction with Support from their CoC during DL Course/Program

Responses	Frequency	Percentage	(n=368)
Very Dissatisfied	26	7.1%	
Somewhat Dissatisfied	32	8.7%	
Neither Satisfied nor Dissatisfied	36	9.8%	
Somewhat Satisfied	63	17.1%	
Very Satisfied	201	54.6%	
Not Applicable	10	2.7%	

Table H15

Frequencies and Percentages of Likert Scale Responses to Question Regarding CAF Members Satisfaction with Support from their Family during DL Course/Program

Responses	Frequency	Percentage	(n=368)
Very Dissatisfied	6	1.6%	
Somewhat Dissatisfied	12	3.3%	
Neither Satisfied nor Dissatisfied	42	11.4%	
Somewhat Satisfied	33	9%	
Very Satisfied	225	61.1%	
Not Applicable	50	13.6%	

Table H16

Frequencies and Percentages of Likert Scale Responses to Question Regarding CAF Members Satisfaction with Support from their Co-workers during DL Course/Program

Responses	Frequency	Percentage	(n=368)
Very Dissatisfied	13	3.5%	
Somewhat Dissatisfied	21	5.7%	
Neither Satisfied nor Dissatisfied	66	17.9%	
Somewhat Satisfied	60	16.3%	
Very Satisfied	177	48.1%	
Not Applicable	31	8.4%	

Table H17

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "The convenience and flexibility of DL courses are beneficial to CAF members."

Responses	Frequency	Percentage	(n=367)
Strongly Disagree	15	4.1%	
Disagree	31	8.4%	
Neither Agree nor Disagree	35	9.5%	
Agree	143	39.0%	
Strongly Agree	143	39.0%	
Not Applicable	0	0%	

Table H18

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "The CAF relies heavily on DL for training and education."

Responses	Frequency	Percentage	(n=366)
Strongly Disagree	2	0.5%	
Disagree	8	2.2%	
Neither Agree nor Disagree	43	11.7%	
Agree	151	41.3%	
Strongly Agree	161	44.0%	
Not Applicable	1	0.3%	

Table H19

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "CAF members build less social networks due to the increase in DL."

Responses	Frequency	Percentage	(n=367)
Strongly Disagree	3	0.8%	
Disagree	34	9.3%	
Neither Agree nor Disagree	65	17.7%	
Agree	92	25.1%	
Strongly Agree	171	46.6%	
Not Applicable	2	0.5%	

Table H20

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "The increasing move to DL by the CAF represents a significant cost reduction in training."

Responses	Frequency	Percentage	(n=368)
Strongly Disagree	9	2.4%	
Disagree	14	3.8%	
Neither Agree nor Disagree	60	16.3%	
Agree	151	41.0%	
Strongly Agree	129	35.1%	
Not Applicable	5	1.4%	

Table H21

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "DL learners miss out on valuable group discussions due to not being physically face-to-face."

Responses	Frequency	Percentage	(n=368)
Strongly Disagree	8	2.2%	
Disagree	23	6.3%	
Neither Agree nor Disagree	36	9.8%	
Agree	109	29.6%	
Strongly Agree	191	51.9%	
Not Applicable	1	0.3%	

Table H22

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "CAF members who are DL learners are often required to complete their studies while continuing to be responsible for their normal position workload."

Responses	Frequency	Percentage	(n=368)
Strongly Disagree	3	0.8%	
Disagree	6	1.6%	
Neither Agree nor Disagree	17	4.6%	
Agree	73	19.8%	
Strongly Agree	266	72.3%	
Not Applicable	3	0.8%	

Table H23

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "Establishing "Learning Contracts" to be signed by CAF members and their supervisors assigning permitted hours per week for the DL course should be a requirement for all learners of DL courses.

Responses	Frequency	Percentage	(n=368)
Strongly Disagree	18	4.9%	
Disagree	20	5.4%	
Neither Agree nor Disagree	70	19.0%	
Agree	91	24.7%	
Strongly Agree	161	43.8%	
Not Applicable	8	2.2%	

Table H24

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "The new generations of CAF members prefer DL over classroom courses."

Responses	Frequency	Percentage	(n=367)
Strongly Disagree	22	6.0%	
Disagree	54	14.7%	
Neither Agree nor Disagree	195	53.1%	
Agree	66	18.0%	
Strongly Agree	21	5.7%	
Not Applicable	9	2.5%	

Table H25

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "DL learners have more reading to do than learners who are physically together in a classroom."

Responses	Frequency	Percentage	(n=368)
Strongly Disagree	7	1.9%	
Disagree	38	10.3%	
Neither Agree nor Disagree	105	28.5%	
Agree	125	34.0%	
Strongly Agree	92	25.0%	
Not Applicable	1	0.3%	

Table H26

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "DL in the CAF is higher quality than DL offered by civilian schools (e.g., universities, colleges)."

Responses	Frequency	Percentage	(n=366)
Strongly Disagree	39	10.7%	
Disagree	62	16.9%	
Neither Agree nor Disagree	221	60.4%	
Agree	20	5.5%	
Strongly Agree	2	0.5%	
Not Applicable	22	6.0%	

Table H27

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "The CAF is moving in a good direction by increasing the use of DL."

Responses	Frequency	Percentage	(n=367)
Strongly Disagree	50	13.6%	
Disagree	87	23.7%	
Neither Agree nor Disagree	96	26.2%	
Agree	112	30.5%	
Strongly Agree	22	6.0%	
Not Applicable	0	0%	

Table H28

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "The quality of DL in the CAF has increased over the past ten years."

Responses	Frequency	Percentage	(n=367)
Strongly Disagree	9	2.5%	
Disagree	16	4.4%	
Neither Agree nor Disagree	64	17.4%	
Agree	167	45.5%	
Strongly Agree	103	28.1%	
Not Applicable	8	2.2%	

Table H29

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "DL courses often cause feelings of isolation."

Responses	Frequency	Percentage	(n=368)
Strongly Disagree	17	4.6%	
Disagree	64	17.4%	
Neither Agree nor Disagree	117	31.8%	
Agree	119	32.3%	
Strongly Agree	48	13.0%	
Not Applicable	3	0.8%	

Table H30

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "Older CAF members dislike DL."

Responses	Frequency	Percentage	(n=363)
Strongly Disagree	6	1.7%	
Disagree	53	14.6%	
Neither Agree nor Disagree	138	38.0%	
Agree	104	28.7%	
Strongly Agree	52	14.3%	
Not Applicable	10	2.8%	

Table H31

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "CAF members suffer from a lack of face-to-face mentoring due to the increase in DL."

Responses	Frequency	Percentage	(n=356)
Strongly Disagree	4	1.1%	
Disagree	35	9.8%	
Neither Agree nor Disagree	42	11.8%	
Agree	163	45.8%	
Strongly Agree	112	31.5%	
Not Applicable	0	0%	

Table H32

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "DL courses add extra difficulties not associated with traditional classroom courses."

Responses	Frequency	Percentage	(n=361)
Strongly Disagree	4	1.1%	
Disagree	32	8.9%	
Neither Agree nor Disagree	87	24.1%	
Agree	158	43.8%	
Strongly Agree	79	21.9%	
Not Applicable	1	0.3%	

Table H33

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "Students learn more during DL courses than in traditional classrooms."

Responses	Frequency	Percentage	(n=363)
Strongly Disagree	76	20.9%	
Disagree	136	37.5%	
Neither Agree nor Disagree	132	36.4%	
Agree	16	4.4%	
Strongly Agree	3	0.3%	
Not Applicable	0	0%	

Table H34

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "Students are more likely to do the required readings in a DL course than in a traditional classroom course."

Responses	Frequency	Percentage	(n=363)
Strongly Disagree	46	12.7%	
Disagree	87	24.0%	
Neither Agree nor Disagree	110	30.3%	
Agree	87	24.0%	
Strongly Agree	32	8.8%	
Not Applicable	1	0.3%	

Table H35

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "Self-motivation is often a problem in DL courses."

Responses	Frequency	Percentage	(n=363)
Strongly Disagree	6	1.7%	
Disagree	41	11.3%	
Neither Agree nor Disagree	72	19.8%	
Agree	180	49.6%	
Strongly Agree	63	17.4%	
Not Applicable	1	0.3%	

Table H36

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "Students take more time to formulate their thoughts in online forum discussions and, therefore, responses are more meaningful."

Responses	Frequency	Percentage	(n=363)
Strongly Disagree	20	5.5%	
Disagree	72	19.8%	
Neither Agree nor Disagree	112	30.9%	
Agree	119	32.8%	
Strongly Agree	33	9.1%	
Not Applicable	7	1.9%	

Table H37

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "DL increases academic dishonesty (e.g., cheating, plagiarism)."

Responses	Frequency	Percentage	(n=363)
Strongly Disagree	25	6.9%	
Disagree	105	28.9%	
Neither Agree nor Disagree	143	39.4%	
Agree	60	16.5%	
Strongly Agree	29	8%	
Not Applicable	1	0.3%	

Table H38

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "DL increases the chance of burn-out for CAF members."

Responses	Frequency	Percentage	(n=363)
Strongly Disagree	21	5.8%	
Disagree	72	19.8%	
Neither Agree nor Disagree	133	36.6%	
Agree	78	21.5%	
Strongly Agree	56	15.4%	
Not Applicable	3	0.8%	

Table H39

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "DL studies are often significantly disrupted due to military-specific issues such as postings and operations."

Responses	Frequency	Percentage	(n=363)
Strongly Disagree	5	1.4%	
Disagree	31	8.5%	
Neither Agree nor Disagree	69	19.0%	
Agree	148	40.8%	
Strongly Agree	109	30.0%	
Not Applicable	1	0.3%	

Table H40

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "A lack of comfort with computer technology and Internet use makes DL harder for many CAF members than a traditional in-class course."

Responses	Frequency	Percentage	(n=363)
Strongly Disagree	19	5.2%	
Disagree	104	28.7%	
Neither Agree nor Disagree	98	27.0%	
Agree	101	27.8%	
Strongly Agree	38	10.5%	
Not Applicable	3	0.8%	

Table H41

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "Increased use of DL by the CAF increases the quality of life of CAF members due to decreasing the requirements to travel for courses."

Responses	Frequency	Percentage	(n=362)
Strongly Disagree	26	7.2%	
Disagree	78	21.5%	
Neither Agree nor Disagree	99	27.3%	
Agree	117	32.3%	
Strongly Agree	41	11.3%	
Not Applicable	1	0.3%	

Table H42

Frequencies and Percentages of Likert Scale Responses to Question Regarding Agreement with: "The CAF has good technical support systems in place to help should any technical problems arise during DL courses."

Responses	Frequency	Percentage (n=363)
Strongly Disagree	34	9.4%
Disagree	64	17.6%
Neither Agree nor Disagree	115	31.7%
Agree	125	34.4%
Strongly Agree	25	6.9%
Not Applicable	0	0%

Appendix I: Crosstabulations

A variety of crosstabulations were analyzed and are presented in this appendix to shed further light upon the relationships between the overall satisfaction of DL in the CAF variable and other variables. This allowed for greater analyses beyond frequencies alone but provided less in-depth and sophisticated analyses than what was provided in the correlation and predictive analyses, which are detailed in the main body of the report. The variables explored in these crosstabulations include: 1) individual demographic characteristics; 2) members' satisfaction with various course quality factors of their most recent DL professional development experience; 3) members' satisfaction with the support they received during their most recent DL professional development experience; and 4) the delivery mode the participant stated that they would choose between DL and classroom, assuming equivalent effort and time provided.

The demographic variables crosstabulated within this section include: 1) gender; 2) rank group; 3) previous experience with DL; 4) age; 5) years of service; 6) first official language; and 7) the latest professional development course the member completed. The course quality variables cross tabulated within this section include: 1) clear learning objectives; 2) effective communications with instructor; 3) interactions with classmates; 4) feeling of being part of a learning community; 5) collaborative group work with classmates; 6) engaging course content; 7) easily accessible required course materials; 8) clearly described course assessment; 9) constructive feedback from instructors on assignments and assessments; 10) timely feedback from instructors on assignments and assessments; 11) effective course technology (e.g. Defence Learning Network); 12) course materials provided that helped to reach course objectives; and 13) course technology that helped to reach course objectives. The support variables crosstabulated within this section include: 1) support from the Chain of Command; 2) support from co-workers;

and 3) support from family. Finally, a crosstabulation is presented within this section that explores the cross-section between the choice that the participant indicated they would make between the two modes of delivery -DL and classroom, assuming equivalent effort and time provided, and their overall satisfaction with DL in the CAF.

As these crosstabulation tables are quite lengthy, they have been placed in this Appendix for further exploration, as required. Only the crosstabulations from nominal demographic data (gender, rank group, first official language, and most recent DL PD course), are presented in the main body of the work. Each crosstabulation is displayed in table format followed by an analysis of the results examining the trends within the sampling frame. The results are described below each table as a measure of combined level of overall DL satisfaction (including somewhat satisfied and very satisfied) for the different cross-sectioned variables that were explored. For variables that have two Likert Scales of satisfaction cross-sectioned, both combined levels of overall DL satisfaction (including somewhat satisfied and very satisfied) and combined level of overall DL dissatisfaction (including somewhat dissatisfied and very dissatisfied) will be presented for the changing levels of satisfaction within the different cross-sectioned variables that were explored.

Gender. The table below illustrates how gender interacted with overall satisfaction of DL in the CAF.

Table I1

*Gender * Overall Satisfaction Crosstabulation*

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Male	Count	11	36	18	128	103	296
	% within gender	(3.7%)	(12.2%)	(6.1%)	(43.2%)	(34.8%)	(100%)
Female	Count	4	5	1	28	15	53
	% within gender	(7.5%)	(9.4%)	(1.9%)	(52.8%)	(28.3%)	(100%)
Total	Count	15	41	19	156	118	349
	% within gender	(4.3%)	(11.7%)	(5.4%)	(44.7%)	(33.8%)	(100%)

While similar, females showed a slightly higher level of combined (somewhat satisfied and very satisfied) level of satisfaction. 78% of male respondents indicated that they were satisfied overall with their DL experiences in the CAF, while 81.1% of females indicated that they were satisfied overall with the DL experience in the CAF.

Rank group. The table below illustrates how rank groups interacted with overall satisfaction of DL in the CAF.

Table I2

*Rank Group * Overall Satisfaction Crosstabulation*

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Junior NCM	Count	2	2	1	12	2	19
	% within rank group	(10.5%)	(10.5%)	(5.3%)	(63.2%)	(10.5%)	(100%)
Senior NCM	Count	8	21	6	71	79	185
	% within rank group	(4.3%)	(11.4%)	(3.2%)	(38.4%)	(42.7%)	(100%)
Junior Officer	Count	2	10	7	37	26	82
	% within rank group	(2.4%)	(12.2%)	(8.5%)	(45.1%)	(31.7%)	(100%)
Senior Officer	Count	3	8	5	36	11	63
	% within rank group	(4.8%)	(12.7%)	(7.9%)	(57.1%)	(17.5%)	(100%)
Total	Count	15	41	19	156	118	349
	% within rank group	(4.3%)	(11.7%)	(5.4%)	(44.7%)	(33.8%)	(100%)

While similar amongst all rank groups, Senior NCMs showed a slightly higher level of combined (somewhat satisfied and very satisfied) level of satisfaction. 81.1% of Senior NCM respondents indicated that they were satisfied overall with their DL experiences in the CAF, followed by Junior Officer respondents at 76.8%, Senior Officer respondents at 74.6%, and Junior NCM respondents at 73.7% satisfied overall.

Previous experience with DL. The table below illustrates how previous experience level with DL interacted with overall satisfaction of DL in the CAF.

Table I3

*Previous Experience with DL * Overall Satisfaction Crosstabulation* (n=349)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Rather Inexperienced	Count	0	1	0	4	3	8
	% within experience	(0.0%)	(12.5%)	(0.0%)	(50.0%)	(37.5%)	(100%)
Somewhat experienced	Count	10	20	14	105	88	237
	% within experience	(4.2%)	(8.4%)	(5.9%)	(44.3%)	(37.1%)	(100%)
Very experienced	Count	5	20	5	48	26	104
	% within experience	(4.8%)	(19.2%)	(4.8%)	(46.2%)	(25.0%)	(100%)
Total	Count	15	41	19	157	117	349
	% within experience	(4.3%)	(11.7%)	(5.4%)	(45.0%)	(33.5%)	(100%)

The group who rated themselves as being rather inexperienced with DL showed the higher level of combined (somewhat satisfied and very satisfied) level of satisfaction. While this group was relatively small (n=8), 87.5% indicated that they were satisfied overall with their DL experiences in the CAF. This group was followed by the somewhat experienced with DL group at 81.4% satisfied and the very experienced with DL group in which 71.2% indicated that they were satisfied overall with their DL experiences in the CAF.

Age. The table below illustrates how participant age interacted with overall satisfaction of DL in the CAF. The ages of participants in this questionnaire ranged from 23 to 58 years. For the purpose of this analysis, age groups were formed below by decades (20s, 30s, 40s and 50s).

Table I4

*Age * Overall Satisfaction Crosstabulation* (n=347)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
20's	Count % of age group	1 (4.5%)	1 (4.5%)	2 (9.1%)	14 (63.6%)	4 (18.2%)	22 (100%)
30's	Count % of age group	3 (4.0%)	8 (10.7%)	9 (12.0%)	41 (54.7%)	14 (18.7%)	75 (100%)
40's	Count % of age group	7 (4.3%)	20 (12.3%)	6 (3.7%)	69 (42.6%)	60 (37.0%)	162 (100%)
50's	Count % of age group	4 (4.5%)	12 (13.6%)	2 (2.3%)	30 (34.1%)	40 (45.5%)	88 (100%)
Total	Count % of age group	15 (4.3%)	41 (11.8%)	19 (5.5%)	154 (44.4%)	118 (34.0%)	347 (100%)

The participants in the 20's age group showed the higher level of combined (somewhat satisfied and very satisfied) level of satisfaction. While this group was relatively small (n=22), 81.8% indicated that they were satisfied overall with their DL experiences in the CAF. This group was followed by identical results for the 40's and 50's at 79.6% satisfied overall and the lowest level of satisfaction overall was with the group in their 30's with 73.4% indicating that they were satisfied overall with their DL experiences in the CAF.

Years of military service. The table below illustrates how participants' years of military service interacted with overall satisfaction of DL in the CAF. The years of military service in this questionnaire ranged from 3 to 37 years. For the purpose of analysis, years of service groups were formed below by: 1) less than 10 years; 2) 10-19 years; 3) 20-29 years; and 4) 30-37 years.

Table I5

*Years of Service (YOS) * Overall Satisfaction Crosstabulation* (n=348)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
<10	Count	2	3	2	26	5	38
	% of YOS group	(5.3%)	(7.9%)	(5.3%)	(68.4%)	(13.2%)	(100%)
10-19	Count	2	10	11	39	24	86
	% of YOS group	(2.3%)	(11.6%)	(12.8%)	(45.3%)	(27.9%)	(100%)
20-29	Count	7	17	2	58	45	129
	% of YOS group	(5.4%)	(13.2%)	(1.6%)	(45.0%)	(34.9%)	(100%)
30-37	Count	3	11	4	33	44	95
	% of YOS group	(3.2%)	(11.6%)	(4.2%)	(34.7%)	(46.3%)	(100%)
Total	Count	14	41	19	156	118	348
	% of YOS group	(4.0%)	(11.8%)	(5.5%)	(44.8%)	(33.9%)	(100%)

While somewhat similar amongst all groups, the participants who had less than 10 years of service showed the higher level of combined (somewhat satisfied and very satisfied) level of satisfaction. For this group, 81.6% indicated that they were satisfied overall with their DL experiences in the CAF. This group was followed by those with 30 to 37 years of service with 81.0% satisfied overall, then by the group with 20 to 29 years of service at 79.9%. The group with 10 to 19 years of service showed the lowest level of satisfaction with their DL experiences in the CAF overall with 73.2%.

First official language. The table below illustrates how participants' first official language (i.e. English or French) interacted with overall satisfaction of DL in the CAF.

Table I6

*First Official Language * Overall Satisfaction Crosstabulation* (n=349)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
English	Count % within FOL	13 (4.9%)	32 (12.1%)	11 (4.2%)	127 (48.1%)	81 (30.7%)	264 (100%)
French	Count % within FOL	2 (2.4%)	9 (10.6%)	8 (9.4%)	29 (34.1%)	37 (43.5%)	85 (100%)
Total	Count % within FOL	15 (4.3%)	41 (11.7%)	19 (5.4%)	156 (44.7%)	118 (33.8%)	349 (100%)

While very similar amongst the two groups, the group of participants who indicated that their first official language was English showed a slightly higher level of combined (somewhat satisfied and very satisfied) level of satisfaction. For this group, 78.8% indicated that they were satisfied overall with their DL experiences in the CAF. For the group of participants who indicated their first official language was French, 77.6% indicated that they were satisfied overall with their DL experiences in the CAF.

Latest professional development course/program completed. The table below illustrates how the participants' latest professional development course completed, within the courses/programs completed amongst the sampling frame, interacted with overall satisfaction of DL in the CAF.

Table I7

*Latest Professional Development Course/Program Completed * Overall Satisfaction Crosstabulation* (n=368)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
CAFJOD	Count	2	11	6	43	29	91
	% of latest PD	(2.2%)	(12.1%)	(6.6%)	(47.3%)	(31.9%)	(100%)
PLQ	Count	2	4	3	11	4	24
	% of latest PD	(8.3%)	(16.7%)	(12.5%)	(45.8%)	(16.7%)	(100%)
ILP	Count	3	8	2	22	22	57
	% of latest PD	(5.3%)	(14.0%)	(3.5%)	(38.6%)	(38.6%)	(100%)
ALP	Count	4	6	0	27	13	50
	% of latest PD	(8.0%)	(12.0%)	(0.0%)	(54.0%)	(26.0%)	(100%)
SLP	Count	1	5	2	17	26	51
	% of latest PD	(2.0%)	(9.8%)	(3.9%)	(33.3%)	(51.0%)	(100%)
SAP	Count	1	2	5	10	24	42
	% of latest PD	(2.4%)	(4.8%)	(11.9%)	(23.8%)	(57.1%)	(100%)
JCSP	Count	3	7	4	31	8	53
	% of latest PD	(5.3%)	(13.2%)	(7.5%)	(58.5%)	(15.1%)	(100%)
Total	Count	16	43	22	161	126	368
	% of latest PD	(4.3%)	(11.7%)	(6.0%)	(43.8%)	(34.2%)	(100%)

The ranked list below shows the combined (somewhat satisfied and very satisfied) levels of satisfaction, in descending order, with the related combined percentage. Of note, students who had completed the SLP the most recently rated the highest level of satisfaction with DL in the CAF overall. On the other hand, students who had completed the PLQ the most recently rated the lowest level of satisfaction with DL in the CAF overall.

Table I8

Rank of Overall DL Satisfaction by Most Recent PD Course/Program Completed

Rank	Professional Development Course/Program	Percentage
1	SLP	84.3%
2	SAP	80.9%
3	ALP	80.0%
4	CAFJOD	79.2%
5	ILP	77.2%
6	JCSP	73.6%
7	PLQ	62.5%

Clear learning objectives. The table below illustrates how the participants' satisfaction with clear learning objectives, as an indicator of course quality, interacted with overall DL satisfaction.

Table I9

Satisfaction with Clear Learning Objectives Overall Satisfaction Crosstabulation* (n=367)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. with clear L.O.	2 (50.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	1 (25.0%)	4 (100%)
Somewhat Dissatisfied	Count % sat. with clear L.O.	5 (22.7%)	9 (40.9%)	1 (4.5%)	6 (27.3%)	1 (4.5%)	22 (100%)
Neither	Count % sat. with clear L.O.	2 (11.8%)	8 (47.1%)	5 (29.4%)	2 (11.8%)	0 (0.0%)	17 (100%)
Somewhat Satisfied	Count % sat. with clear L.O.	5 (4.3%)	13 (11.1%)	12 (10.3%)	71 (60.7%)	16 (13.7%)	117 (100%)
Very Satisfied	Count % sat. with clear L.O.	2 (1.0%)	12 (5.8%)	3 (1.4%)	82 (39.6%)	108 (52.2%)	207 (100%)
Total	Count % sat. with clear L.O.	16 (4.4%)	43 (11.7%)	21 (5.7%)	161 (43.9%)	126 (34.3%)	367 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of clear learning objectives of their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with the course quality factor of clear learning objectives, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 74.4%. For those who were very satisfied with the course quality factor of clear learning objectives, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 91.8%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of clear learning objectives. To specify, for those who were somewhat dissatisfied with the course quality factor of clear learning objectives, their combined (somewhat dissatisfied and very dissatisfied) levels of overall satisfaction was 31.8%. For those who were very dissatisfied with the course quality factor of clear learning objectives, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 25.0%.

Effective communications with instructor. The table below illustrates how the participants' satisfaction with effective communications with instructor, as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I10

Satisfaction with Effective Communications with Instructor Overall Satisfaction Crosstabulation* (n=366)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. with effective comms with instructor	6 (35.3%)	5 (29.4%)	2 (11.8%)	2 (11.8%)	2 (11.8%)	17 (100%)
Somewhat Dissatisfied	Count % sat. with effective comms with instructor	3 (10.3%)	13 (44.8%)	1 (3.4%)	10 (34.5%)	2 (6.9%)	29 (100%)
Neither	Count % sat. with effective comms with instructor	1 (3.1%)	5 (15.6%)	6 (18.8%)	16 (50%)	4 (12.5%)	32 (100%)
Somewhat Satisfied	Count % sat. with effective comms with instructor	1 (1.3%)	5 (6.3%)	4 (5.1%)	54 (68.4%)	15 (19.0%)	79 (100%)
Very Satisfied	Count % sat. with effective comms with instructor	5 (3.1%)	12 (7.5%)	5 (3.1%)	57 (35.6%)	81 (50.6%)	160 (100%)
N/A	Count % sat. with effective comms with instructor	0 (0.0%)	3 (6.1%)	4 (8.2%)	22 (44.9%)	20 (40.8%)	49 (100%)
Total	Count % sat. with effective comms with instructor	16 (4.3%)	43 (11.7%)	22 (6.0%)	161 (43.8%)	124 (33.9%)	366 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of effective communications with instructor on their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with effective communications with instructor, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 87.4%. For those who were very satisfied with effective

communications with instructor, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 86.2%.

These levels of satisfaction are much higher than for those who were dissatisfied with the effective communications with instructor. To specify, for those who were somewhat dissatisfied with effective communications with instructor, their combined (somewhat dissatisfied and very dissatisfied) levels of overall satisfaction was 41.4%. For those who were very dissatisfied with effective communications with instructor, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 23.6%.

Interactions with classmates. The table below illustrates how the participants' satisfaction with their interactions with classmates, as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I11

Satisfaction with Interactions with Classmates Overall Satisfaction Crosstabulation* (n=364)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. with effective comms with instructor	8 (33.3%)	9 (37.5%)	3 (12.5%)	4 (16.7%)	0 (0.0%)	24 (100%)
Somewhat Dissatisfied	Count % sat. with effective comms with instructor	1 (2.5%)	10 (25.0%)	3 (7.5%)	23 (57.5%)	3 (7.5%)	40 (100%)
Neither	Count % sat. with effective comms with instructor	4 (8.2%)	9 (18.4%)	5 (10.2%)	26 (53.1%)	5 (10.2%)	49 (100%)
Somewhat Satisfied	Count % sat. with effective comms with instructor	2 (2.1%)	5 (5.3%)	3 (3.2%)	47 (50%)	37 (39.4%)	94 (100%)
Very Satisfied	Count % sat. with effective comms with instructor	0 (0.0%)	5 (5.2%)	3 (3.1%)	29 (30.2%)	59 (61.5%)	96 (100%)
N/A	Count % sat. with effective comms with instructor	1 (1.6%)	3 (4.9%)	5 (8.2%)	31 (50.8%)	21 (34.4%)	61 (100%)
Total	Count % sat. with effective comms with instructor	16 (4.4%)	41 (11.3%)	22 (6.0%)	160 (44.0%)	125 (34.3%)	364 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of interactions with classmates on their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with their interactions with classmates, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 89.4%. For those who were very satisfied with their interactions with

classmates, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 91.7%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of interactions with classmates. To specify, for those who were somewhat dissatisfied with the course quality factor of interactions with classmates, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 65.0%. For those who were very dissatisfied with the course quality factor of interactions with classmates, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 16.7%.

Feelings of being a part of a learning community. The table below illustrates how the participants' satisfaction with feelings of being part of a learning community, as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I12

*Satisfaction with Feelings of Being Part of a Learning Community * Overall Satisfaction Crosstabulation* (n=368)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. with learning comm.	11 (29.7%)	12 (32.4%)	5 (13.5%)	7 (18.9%)	2 (5.4%)	37 (100%)
Somewhat Dissatisfied	Count % sat. with learning comm.	2 (4.1%)	15 (30.6%)	4 (8.2%)	25 (51.0%)	3 (6.1%)	49 (100%)
Neither	Count % sat. with learning comm.	1 (1.3%)	7 (9.1%)	6 (7.8%)	43 (55.8%)	20 (26.0%)	77 (100%)
Somewhat Satisfied	Count % sat. with learning comm.	1 (1.0%)	7 (7.1%)	3 (3.1%)	55 (56.1%)	32 (32.7%)	98 (100%)
Very Satisfied	Count % sat. with learning comm.	0 (0.0%)	1 (1.2%)	2 (2.5%)	18 (22.2%)	60 (74.1%)	81 (100%)
N/A	Count % sat. with learning comm.	1 (3.8%)	1 (3.8%)	2 (7.7%)	13 (50.0%)	9 (34.6%)	26 (100%)
Total	Count % sat. with learning comm.	16 (4.3%)	43 (11.7%)	22 (6.0%)	161 (43.8%)	126 (34.2%)	368 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of feelings of being part of a learning community on their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with feelings of being part of a learning community, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 88.8%. For those who were very satisfied with feelings of being part of a learning community, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 96.3%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of feelings of being part of a learning community. To specify, for those who were somewhat dissatisfied with the course quality factor of feelings of being part of a learning community, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 57.1%. For those who were very dissatisfied with the course quality factor of feelings of being part of a learning community, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 24.3%.

Collaborative group work with classmates. The table below illustrates how the participants' satisfaction with collaborative group work with classmates, as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I13

*Satisfaction with Collaborative Group Work with Classmates * Overall Satisfaction Crosstabulation* (n=365)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. group work	9 (27.3%)	11 (33.3%)	5 (15.2%)	7 (21.2%)	1 (3.0%)	33 (100%)
Somewhat Dissatisfied	Count % sat. with group work	1 (2.0%)	13 (25.5%)	4 (7.8%)	27 (52.9%)	6 (11.8%)	51 (100%)
Neither	Count % sat. with group work	4 (5.6%)	11 (15.3%)	3 (4.2%)	36 (50.0%)	18 (25.0%)	72 (100%)
Somewhat Satisfied	Count % sat. with group work	1 (1.4%)	1 (1.4%)	4 (5.4%)	39 (52.7%)	29 (39.2%)	74 (100%)
Very Satisfied	Count % sat. with group work	0 (0.0%)	2 (3.2%)	1 (1.6%)	16 (25.4%)	44 (69.8%)	63 (100%)
N/A	Count % sat. with group work	1 (1.4%)	5 (6.9%)	5 (6.9%)	34 (47.2%)	27 (37.5%)	72 (100%)
Total	Count % sat. with group work	16 (4.4%)	43 (11.8%)	22 (6.0%)	159 (43.6%)	125 (34.2%)	365 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of collaborative groupwork with classmates on their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with collaborative groupwork with classmates, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 91.9%. For those who were very satisfied with collaborative groupwork with classmates, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 95.2%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of feelings of being part of a learning community. To specify, for those who were somewhat dissatisfied with the course quality factor of collaborative groupwork with classmates, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 64.7%. For those who were very dissatisfied with the course quality factor of collaborative groupwork with classmates, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 24.2%.

Engaging course content. The table below illustrates how the participants' satisfaction with the level of engaging course content, as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I14

*Satisfaction with Engaging Course Content * Overall Satisfaction Crosstabulation* (n=365)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. engaging content	6 (30.0%)	9 (45.0%)	2 (10.0%)	2 (10.0%)	1 (5.0%)	20 (100%)
Somewhat Dissatisfied	Count % sat. engaging content	5 (15.6%)	9 (28.1%)	4 (12.5%)	12 (37.5%)	2 (6.3%)	32 (100%)
Neither	Count % sat. engaging content	3 (5.8%)	8 (15.4%)	10 (19.2%)	29 (55.8%)	2 (3.8%)	52 (100%)
Somewhat Satisfied	Count % sat. engaging content	1 (0.7%)	7 (5.2%)	4 (3.0%)	77 (57.5%)	45 (33.6%)	134 (100%)
Very Satisfied	Count % sat. engaging content	1 (0.8%)	9 (7.1%)	2 (1.6%)	39 (31.0%)	75 (59.5%)	126 (100%)
N/A	Count % sat. engaging content	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100%)
Total	Count % sat. engaging content	16 (4.4%)	43 (11.8%)	22 (6.0%)	159 (43.6%)	125 (34.2%)	365 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of engaging course content on their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with the level of engaging course content, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 91.1%. For those who were very satisfied with the level of engaging course content, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 90.5%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of engaging course content. To specify, for those who were somewhat dissatisfied with the course quality factor of engaging course content, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 43.8%. For those who were very dissatisfied with the course quality factor of engaging course content, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 15.0%.

Easily accessible required course content. The table below illustrates how the participants' satisfaction with easily accessible required course content, as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I15

*Satisfaction with Easily Accessible Required Course Content * Overall Satisfaction Crosstabulation* (n=367)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. accessible content	3 (17.6%)	7 (41.2%)	1 (5.9%)	3 (17.6%)	3 (17.6%)	17 (100%)
Somewhat Dissatisfied	Count % sat. accessible content	2 (5.1%)	9 (23.1%)	2 (5.1%)	21 (53.8%)	5 (12.8%)	39 (100%)
Neither	Count % sat. accessible content	3 (10.7%)	5 (17.9%)	6 (21.4%)	13 (46.4%)	1 (3.6%)	28 (100%)
Somewhat Satisfied	Count % sat. accessible content	3 (2.9%)	13 (12.4%)	6 (5.7%)	58 (55.2%)	25 (23.8%)	105 (100%)
Very Satisfied	Count % sat. accessible content	5 (2.9%)	8 (4.6%)	7 (4.0%)	62 (35.6%)	92 (52.9%)	174 (100%)
N/A	Count % sat. accessible content	0 (0.0%)	1 (25.0%)	0 (0.0%)	3 (75.0%)	0 (0.0%)	4 (100%)
Total	Count % sat. accessible content	16 (4.4%)	43 (11.7%)	22 (6.0%)	160 (43.6%)	126 (34.3%)	367 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of easily accessible required course content on their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with the level of easily accessible required course content, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 79.0%. For those who were very satisfied with the level of easily accessible required course content, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 88.5%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of engaging course content. To specify, for those who were somewhat

dissatisfied with the course quality factor of easily accessible required course content, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 66.6%. For those who were very dissatisfied with the course quality factor of easily accessible required course content, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 35.2%.

Clearly described course assessments. The table below illustrates how the participants' satisfaction with clearly described course assessments, as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I16

Satisfaction with Clearly Described Course Assessments Overall Satisfaction Crosstabulation* (n=367)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. clear assessments	2 (40.0%)	0 (0.0%)	0 (0.0%)	1 (20.0%)	2 (40.0%)	5 (100%)
Somewhat Dissatisfied	Count % sat. clear assessments	3 (12.5%)	6 (25.0%)	1 (4.2%)	12 (50%)	2 (8.3%)	24 (100%)
Neither	Count % sat. clear assessments	5 (19.2%)	8 (30.8%)	3 (11.5%)	9 (34.6%)	1 (3.8%)	26 (100%)
Somewhat Satisfied	Count % sat. clear assessments	3 (2.8%)	14 (13.0%)	11 (10.2%)	56 (51.9%)	24 (22.2%)	108 (100%)
Very Satisfied	Count % sat. clear assessments	3 (1.5%)	13 (6.6%)	7 (3.6%)	78 (39.6%)	96 (48.7%)	197 (100%)
N/A	Count % sat. clear assessments	0 (0.0%)	2 (28.6%)	0 (0.0%)	4 (57.1%)	1 (14.3%)	7 (100%)
Total	Count % sat. clear assessments	16 (4.4%)	43 (11.7%)	22 (6.0%)	160 (43.6%)	126 (34.3%)	367 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of clearly described course assessments on their most recent DL professional development

course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with clearly described course assessments, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 74.1%. For those who were very satisfied with the level of clearly described course assessments, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 88.3%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of clearly described course assessments. To specify, for those who were somewhat dissatisfied with the course quality factor of clearly described course assessments, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 58.3%. For those who were very dissatisfied with the course quality factor of clearly described course assessments, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 60.0%. As the number of those who were very dissatisfied with this variable is very small (n=5), this number may not be a good indicator.

Constructive feedback from instructors on assignments and assessments. The table below illustrates how the participants' satisfaction with constructive feedback from instructors on assignments and assessments, as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I17

Satisfaction with Constructive Feedback from Instructors on Assignments and Assessments Overall Satisfaction Crosstabulation* (n=367)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. constructive feedback	6 (46.2%)	2 (15.4%)	1 (7.7%)	2 (15.4%)	2 (15.4%)	13 (100%)
Somewhat Dissatisfied	Count % sat. constructive feedback	1 (2.9%)	15 (44.1%)	5 (14.7%)	12 (35.3%)	1 (2.9%)	34 (100%)
Neither	Count % sat. constructive feedback	1 (4.0%)	5 (20.0%)	5 (20.0%)	11 (44.0%)	3 (12.0%)	25 (100%)
Somewhat Satisfied	Count % sat. constructive feedback	2 (2.9%)	6 (8.8%)	3 (4.4%)	44 (64.7%)	13 (19.1%)	68 (100%)
Very Satisfied	Count % sat. constructive feedback	5 (2.8%)	13 (7.2%)	6 (3.3%)	67 (37.2%)	89 (49.4%)	180 (100%)
N/A	Count % sat. constructive feedback	1 (2.1%)	2 (4.3%)	2 (4.3%)	25 (53.2%)	17 (36.2%)	47 (100%)
Total	Count % sat. constructive feedback	16 (4.4%)	43 (11.7%)	22 (6.0%)	161 (43.9%)	125 (34.1%)	367 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of constructive feedback from instructors on assignments and assessments on their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with constructive feedback from instructors on assignments and assessments, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 83.8%. For those who were very satisfied with constructive feedback from instructors on assignments and assessments, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 86.6%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of constructive feedback from instructors on assignments and assessments. To specify, for those who were somewhat dissatisfied with the course quality factor of constructive feedback from instructors on assignments and assessments, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 38.2%. For those who were very dissatisfied with the course quality factor of constructive feedback from instructors on assignments and assessments, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 30.8%.

Timely feedback from instructors on assignments and assessments. The table below illustrates how the participants' satisfaction with timely feedback from instructors on assignments and assessments, as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I18

Satisfaction with Timely Feedback from Instructors on Assignments and Assessments Overall Satisfaction Crosstabulation* (n=368)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. timely feedback	1 (11.1%)	3 (33.3%)	1 (11.1%)	1 (11.1%)	3 (33.3%)	9 (100%)
Somewhat Dissatisfied	Count % sat. timely feedback	2 (8.7%)	8 (34.8%)	5 (21.7%)	8 (34.8%)	0 (0.0%)	23 (100%)
Neither	Count % sat. timely feedback	3 (12.5%)	5 (20.8%)	4 (16.7%)	12 (50.0%)	0 (0.0%)	24 (100%)
Somewhat Satisfied	Count % sat. timely feedback	5 (6.0%)	9 (10.7%)	5 (6.0%)	49 (58.3%)	16 (19.0%)	84 (100%)
Very Satisfied	Count % sat. constructive feedback	4 (2.3%)	14 (8.0%)	4 (2.3%)	64 (36.6%)	89 (50.9%)	175 (100%)
N/A	Count % sat. timely feedback	1 (1.9%)	4 (7.5%)	3 (5.7%)	27 (50.9%)	18 (34.0%)	53 (100%)
Total	Count % sat. timely feedback	16 (4.3%)	43 (11.7%)	22 (6.0%)	161 (43.8%)	126 (34.2%)	368 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of timely feedback from instructors on assignments and assessments on their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with timely feedback from instructors on assignments and assessments their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 77.3%. For those who were very satisfied with timely feedback from instructors on assignments and assessments, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 87.5%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of timely feedback from instructors on assignments and assessments. To specify, for those who were somewhat dissatisfied with the course quality factor of timely feedback from instructors on assignments and assessments, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 34.8%. For those who were very dissatisfied with the course quality factor of timely feedback from instructors on assignments and assessments, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 44.4%.

Effective course technology. The table below illustrates how the participants' satisfaction with effective course technology (e.g. Defence Learning Network), as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I19

*Satisfaction with Effective Course Technology * Overall Satisfaction Crosstabulation* (n=366)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. effective course technology	8 (32.0%)	9 (36.0%)	1 (4.0%)	5 (20.0%)	2 (8.0%)	25 (100%)
Somewhat Dissatisfied	Count % sat. effective course technology	1 (1.9%)	19 (35.8%)	7 (13.2%)	21 (39.6%)	5 (9.4%)	53 (100%)
Neither	Count % sat. effective course technology	2 (4.7%)	5 (11.6%)	4 (9.3%)	26 (60.5%)	6 (14.0%)	43 (100%)
Somewhat Satisfied	Count % sat. effective course technology	3 (2.5%)	6 (4.9%)	8 (6.6%)	73 (59.8%)	32 (26.2%)	122 (100%)
Very Satisfied	Count % sat. effective course technology	2 (1.7%)	4 (3.3%)	1 (0.8%)	34 (28.1%)	80 (66.1%)	121 (100%)
N/A	Count % sat. effective course technology	0 (0.0%)	0 (0.0%)	1 (50.0%)	1 (50.0%)	0 (0.0%)	2 (100%)
Total	Count % sat. effective course technology	16 (4.4%)	43 (11.7%)	22 (6.0%)	160 (43.7%)	125 (34.2%)	366 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of effective course technology on their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with effective course technology their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 86.0%. For those who were very satisfied with effective course technology, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 94.2%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of effective course technology. To specify, for those who were somewhat dissatisfied with the course quality factor of effective course technology, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 49.0%. For those who were very dissatisfied with the course quality factor of effective course technology, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 28.0%.

Course materials provided that helped to reach course objectives. The table below illustrates how the participants' satisfaction with course materials provided that helped to reach course objectives as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I20

*Satisfaction with Course Materials Provided that Helped to Reach Course Objectives * Overall Satisfaction Crosstabulation* (n=367)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. materials helped reach course objectives	1 (16.7%)	1 (16.7%)	0 (0.0%)	2 (33.3%)	2 (33.3%)	6 (100%)
Somewhat Dissatisfied	Count % sat. materials helped reach course objectives	5 (20.8%)	9 (37.5%)	0 (0.0%)	8 (33.3%)	2 (8.3%)	24 (100%)
Neither	Count % sat. materials helped reach course objectives	5 (12.8%)	8 (20.5%)	7 (17.9%)	17 (43.6%)	2 (5.1%)	39 (100%)
Somewhat Satisfied	Count % sat. materials helped reach course objectives	3 (2.3%)	17 (13.2%)	10 (7.8%)	71 (55.0%)	28 (21.7%)	129 (100%)
Very Satisfied	Count % sat. materials helped reach course objectives	1 (0.6%)	8 (4.8%)	5 (3.0%)	60 (36.1%)	92 (55.4%)	166 (100%)
N/A	Count % sat. materials helped reach course objectives	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	0 (0.0%)	3 (100%)
Total	Count % sat. materials helped reach course objectives	15 (4.1%)	43 (11.7%)	22 (6.0%)	161 (43.9%)	126 (34.3%)	367 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of course materials provided that helped to reach course objectives on their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with course materials provided that helped to reach course objectives their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 76.7%. For

those who were very satisfied with course materials provided that helped to reach course objectives, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 91.5%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of course materials provided that helped to reach course objectives. To specify, for those who were somewhat dissatisfied with the course quality factor of course materials provided that helped to reach course objectives, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 41.6%. For those who were very dissatisfied with the course quality factor of course materials provided that helped to reach course objectives, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 66.6%. As the number of participants who replied that hey were very dissatisfied with this variable is very low (n=6), these numbers may not give a good indication.

Course technology that helped to reach course objectives. The table below illustrates how the participants' satisfaction with course technology that helped to reach course objectives as an indicator of course quality, interacted with overall satisfaction of DL in the CAF.

Table I21

*Satisfaction with Course Technology that Helped to Reach Course Objectives * Overall Satisfaction Crosstabulation* (n=368)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. tech helped reach course objectives	7 (33.3%)	10 (47.6%)	0 (0.0%)	2 (9.5%)	2 (9.5%)	21 (100%)
Somewhat Dissatisfied	Count % sat. tech helped reach course objectives	4 (9.5%)	10 (23.8%)	3 (7.1%)	20 (47.6%)	5 (11.9%)	42 (100%)
Neither	Count % sat. tech helped reach course objectives	3 (6.3%)	7 (14.6%)	11 (22.9%)	26 (54.2%)	1 (2.1%)	48 (100%)
Somewhat Satisfied	Count % sat. tech helped reach course objectives	1 (0.9%)	9 7.7(%)	7 (6.0%)	70 (59.8%)	30 (25.6%)	117 (100%)
Very Satisfied	Count % sat. tech helped reach course objectives	1 (0.7%)	7 (5.1%)	1 (0.7%)	40 (29.2%)	88 (64.2%)	137 (100%)
N/A	Count % sat. tech helped reach course objectives	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	0 (0.0%)	3 (100%)
Total	Count % sat. tech helped reach course objectives	16 (4.3%)	43 (11.7%)	22 (6.0%)	161 (43.8%)	126 (34.2%)	368 (100%)

As shown in the table above, participants who were satisfied with the course quality factor of course technology that helped to reach course objectives on their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with this factor. To specify, for those who were somewhat satisfied with the course technology that helped to reach course objectives their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 85.4%. For those who

were very satisfied with the course technology that helped to reach course objectives, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 93.4%.

These levels of satisfaction are much higher than for those who were dissatisfied with the course quality factor of course technology that helped to reach course objectives. To specify, for those who were somewhat dissatisfied with the course technology that helped to reach course objectives, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 59.5%. For those who were very dissatisfied with the course quality factor of course technology that helped to reach course objectives, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 19.0%.

Satisfaction with support from the CoC. The table below illustrates how the participants' satisfaction with the support they received from their Chain of Command during their DL interacted with overall satisfaction of DL in the CAF.

Table I22

*Satisfaction with Support from Chain of Command during Most Recent Professional Development Course/Program * Overall Satisfaction Crosstabulation* (n=368)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count	7	5	3	8	3	26
	% sat. CoC support	(26.9%)	(19.2%)	(11.5%)	(30.8%)	(11.5%)	(100%)
Somewhat Dissatisfied	Count	3	10	1	15	3	32
	% sat. CoC support	(9.4%)	(31.3%)	(3.1%)	(46.9%)	(9.4%)	(100%)
Neither	Count	0	5	6	20	5	36
	% sat. CoC support	(0.0%)	(13.9%)	(16.7%)	(55.6%)	(13.9%)	(100%)
Somewhat Satisfied	Count	1	5	1	29	27	63
	% sat. CoC support	(1.6%)	(7.9%)	(1.6%)	(46.0%)	(42.9%)	(100%)
Very Satisfied	Count	5	17	11	83	85	201
	% sat. CoC support	(2.5%)	(8.5%)	(5.5%)	(41.3%)	(42.3%)	(100%)
N/A	Count	0	1	0	6	3	10
	% sat. CoC support	(0.0%)	(10.0%)	(0.0%)	(60.0%)	(30%)	(100%)
Total	Count	16	43	22	161	126	368
	% sat. CoC support	(4.3%)	(11.7%)	(6.0%)	(43.8%)	(34.2%)	(100%)

As shown in the table above, participants who were satisfied with the support they received from their CoC during their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with the support they received. To specify, for those who were somewhat satisfied with the support they received from their CoC, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 88.9%. For those who were very satisfied with the support they received from their CoC during their DL studies, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 83.6%.

These levels of satisfaction are much higher than for those who were dissatisfied with the support they received from the CoC. To specify, for those who were somewhat dissatisfied with the support they received from their CoC, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 56.3%. For those who were very dissatisfied with the support they received from their CoC during their DL studies, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 42.3%.

Satisfaction with support from co-workers. The table below illustrates how the participants' satisfaction with the support they received from their co-workers during their DL interacted with overall satisfaction of DL in the CAF.

Table I23

*Satisfaction with Support from Co-workers during Most Recent Professional Development Course/Program * Overall Satisfaction Crosstabulation* (n=368)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count % sat. co-worker support	5 (38.5%)	2 (15.4%)	0 (0.0%)	4 (30.8%)	2 (15.4%)	13 (100%)
Somewhat Dissatisfied	Count % sat. co-worker support	2 (9.5%)	5 (23.8%)	2 (9.5%)	11 (52.4%)	1 (4.8%)	21 (100%)
Neither	Count % sat. co-worker support	2 (3.0%)	13 (19.7%)	7 (10.6%)	32 (48.5%)	12 (18.2%)	66 (100%)
Somewhat Satisfied	Count % sat. co-worker support	2 (3.3%)	6 (10.0%)	2 (3.3%)	31 (51.7%)	19 (31.7%)	60 (100%)
Very Satisfied	Count % sat. co-worker support	4 (2.3%)	14 (7.9%)	9 (5.1%)	69 (39.0%)	81 (45.8%)	177 (100%)
N/A	Count % sat. co-worker support	1 (3.2%)	3 (9.7%)	2 (6.5%)	14 (45.2%)	11 (35.5%)	31 (100%)
Total	Count % sat. co-worker support	16 (4.3%)	43 (11.7%)	22 (6.0%)	161 (43.8%)	126 (34.2%)	368 (100%)

As shown in the table above, participants who were satisfied with the support they received from their co-workers during their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with the support they received. To specify, for those who were somewhat satisfied with the support they received from their co-workers, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 83.4%. For those who were very satisfied with the support they received from their co-workers during their DL studies, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 84.8%.

These levels of satisfaction are much higher than for those who were dissatisfied with the support they received from the co-workers. To specify, for those who were somewhat dissatisfied with the support they received from their co-workers, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 57.2%. For those who were very dissatisfied with the support they received from their co-workers during their DL studies, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 46.2%.

Satisfaction with support from family. The table below illustrates how the participants' satisfaction with the support they received from their family during their DL interacted with overall satisfaction of DL in the CAF.

Table I24

*Satisfaction with Support from Family during Most Recent Professional Development Course/Program * Overall Satisfaction Crosstabulation* (n=368)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
Very Dissatisfied	Count	1	0	0	3	2	6
	% sat. family support	(16.7%)	(0.0%)	(0.0%)	(50.0%)	(33.3%)	(100%)
Somewhat Dissatisfied	Count	2	4	3	2	1	12
	% sat. family support	(16.7%)	(33.3%)	(25.0%)	(16.7%)	(8.3%)	(100%)
Neither	Count	3	9	6	18	6	42
	% sat. family support	(7.1%)	(21.4%)	(14.3%)	(42.9%)	(14.3%)	(100%)
Somewhat Satisfied	Count	2	2	2	17	10	33
	% sat. family support	(6.1%)	(6.1%)	(6.1%)	(51.5%)	(30.3%)	(100%)
Very Satisfied	Count	5	22	9	97	92	225
	% sat. family support	(2.2%)	(9.8%)	(4.0%)	(43.1%)	(40.9%)	(100%)
N/A	Count	3	6	2	24	15	50
	% sat. family support	(6.0%)	(12.0%)	(4.0%)	(48.0%)	(30.0%)	(100%)
Total	Count	16	43	22	161	126	368
	% sat. family support	(4.3%)	(11.7%)	(6.0%)	(43.8%)	(34.2%)	(100%)

As shown in the table above, generally speaking, participants who were satisfied with the support they received from their family during their most recent DL professional development course/program reported more satisfaction in overall DL satisfaction in the CAF than those who were unsatisfied with the support they received. To specify, for those who were somewhat satisfied with the support they received from their family, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 81.8%. For those who were very satisfied with the support they received from their family during their DL studies, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 84.0%.

The levels of satisfaction for those who said that they were somewhat dissatisfied with this variable are much lower. To specify, their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 25.0%. Surprisingly, but perhaps due to a very small sample size of those who were very disappointed with the support they received from their family during their DL studies (n=6), their combined (somewhat satisfied and very satisfied) levels of overall satisfaction was 83.3%.

Participant choice between DL and classroom. The table below crosstabulates between what delivery mode (DL or classroom) participants said that they would choose for a professional development course with all other things being equal (e.g. time provided, effort required) with overall satisfaction of DL in the CAF.

Table I25

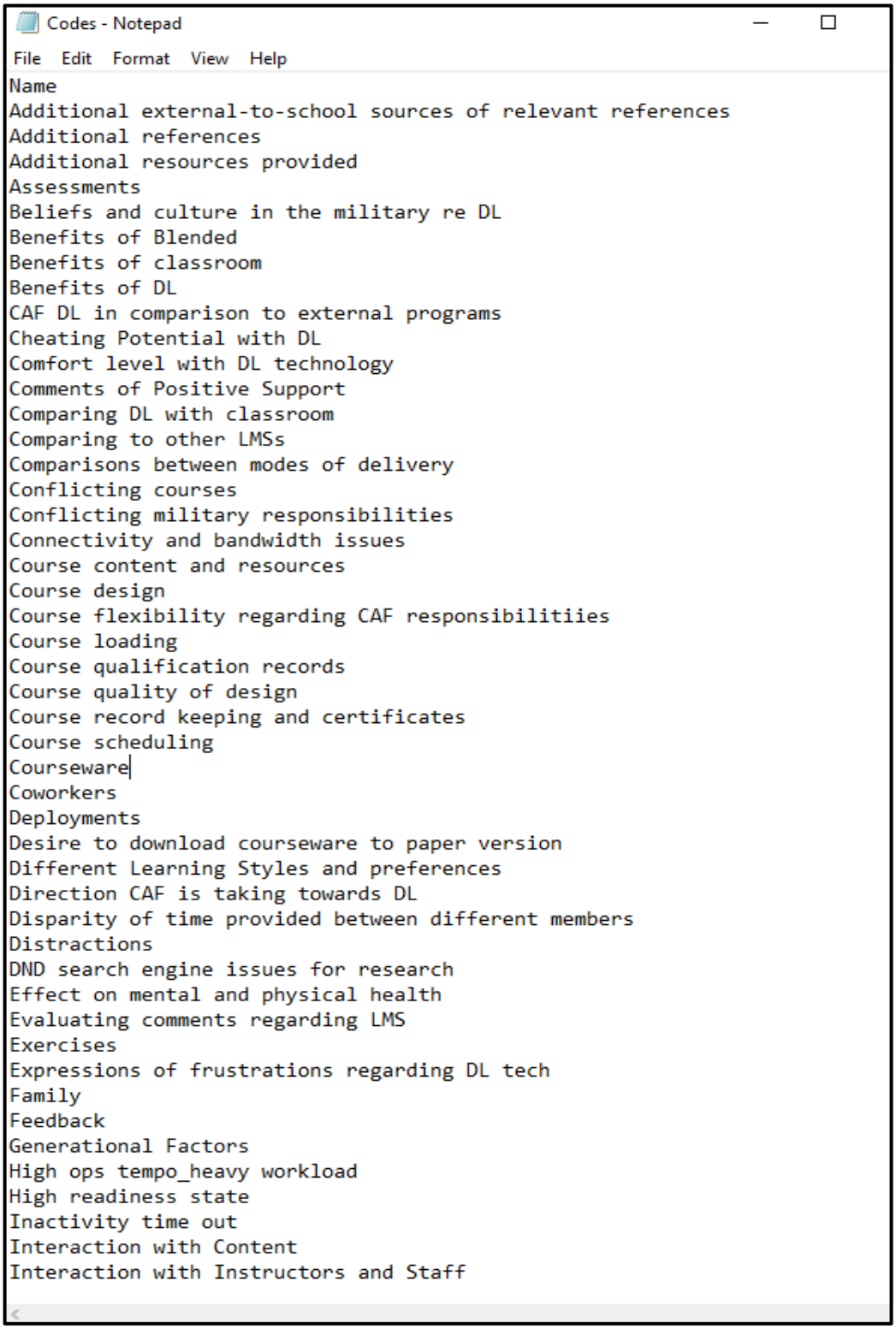
*Participants Choice Between DL and Classroom * Overall Satisfaction Crosstabulation*

(n=346)

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied or Dissatisfied	Somewhat Satisfied	Very Satisfied	Total
DL	Count	1	5	1	45	46	98
	% of delivery mode preference	(1.0%)	(5.1%)	(1.0%)	(45.9%)	(46.9%)	(100%)
Classroom	Count	14	36	19	109	70	248
	% of delivery mode preference	(5.6%)	(14.5%)	(7.7%)	(44.0%)	(28.2%)	(100%)
Total	Count	15	41	20	154	116	346
	% of delivery mode preference	(4.3%)	(11.8%)	(5.8%)	(44.5%)	(33.5%)	(100%)

The group of participants who said that they would choose DL had a largely positive overall level of satisfaction with 92.8% stating that they were somewhat or very satisfied with their DL experience in the CAF overall. On the other hand, participants who said that they would choose classroom for a future professional development course ranked quite a bit lower in their overall satisfaction. In fact, only 72.2% of this group said that they were somewhat or very satisfied with their DL experiences in the CAF overall.

Appendix J: Example of Codes Exported from NVivo



Appendix K: List of Code Categories

Code Categories
o DL support provided by the Chain of Command o Balancing work and DL o Balancing personal life and DL o Suggestions for improvement of CAF DL o Comparisons between modes of delivery o Benefits of a mode of delivery o Present Perceptions about DL in the CAF o Interactions o Course content and resources o Course design o Course logistics o Operational activities o Military work factors o Juggling DL with other work responsibilities o Postings o Military career considerations o Accessibility o Usability of technologies supporting DL o Learning Management System o Perceptions regarding DL technology in the CAF

Appendix L: Example of Codes and Categories of a Theme

Codes	Categories	Theme
Deployments	Operational Activities	Military-Specific Factors Affecting DL Experiences
Exercises	Military Work Factors	
Mission prep training	Juggling DL with other military responsibilities	
High readiness state	Postings	
High ops tempo/ heavy workload	Military career considerations	
Work travel/ temporary duty		
Working across multiple time zones		
Conflicting military responsibilities		
Course flexibility regarding CAF responsibilities		
Latitude within military position to incorporate PD DL		
Postings – domestic		
Postings – OUTCAN		
Promotion considerations		
Conflicting courses		