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A NEW FRONT-END ANALYSIS FRAMEWORK FOR THE CANADIAN ARMED FORCES

Major Marcel Ducharme

JCSP 40

Exercise Solo Flight

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SOLO FLIGHT ESSAY

**A NEW FRONT-END ANALYSIS FRAMEWORK FOR THE
CANADIAN ARMED FORCES**

By / Par le Major Marcel Ducharme

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People are Defence's most important resource. Both the Department and the Forces rely heavily on the work and expertise of dedicated personnel to ensure the operational effectiveness of the military... [Therefore] Defence will continue to strive for excellence by: Recruiting and retaining quality candidates that reflect the face of Canada; Providing world-class technical training and advanced education; [and] Encouraging the continued development of a knowledge-based workforce.

- DND, *Canada First Defence Strategy*¹

INTRODUCTION

The Canadian Armed Forces (CAF) spends over \$2 billion annually² for the professional development (PD) of its personnel as it recognizes people are its most important resource. Beyond the financial resources expended on PD, it is also critical to recognize the significant amount of time the CAF spends developing its personnel. These substantial investments are not surprising considering the CAF must develop and manage the careers of its personnel to fill approximately 4,000 different jobs in which they can be operationally or institutionally employed.³ Additionally, given the dynamic contemporary operating environment in which the CAF operates the requirements for these jobs can change on a regular basis, or entirely new jobs may be created to fill a capability gap. Based upon these challenges and the current fiscally constrained environment, it is important to question whether the CAF has an effective framework to identify job requirements (i.e. tasks,⁴ knowledge, skills, and attitudes [KSAs]⁵) and competencies⁶

¹ Department of National Defence, *Canada First Defence Strategy* (Ottawa, ON: 2008), 16.

² Department of National Defence, *Department of National Defence and the Canadian Armed Forces - 2014-2015 Report on Plans and Priorities* (Ottawa, ON: MND, 2014a), 65-66, 89-90, 90-91.

³ Based upon 98 occupations in the CAF with an average of 40 jobs per occupation, along with 70 generic jobs.

⁴ Tasks are "discrete segments of work, performed by a member, which have a definite beginning and end, and which constitute a logical and necessary part of a duty." Department of National Defence, *The Canadian Armed Forces Military Employment Structure: Volume 1 of 4 - General* (Ottawa, ON: DPGR, 2014a (draft)), 2-3.

that can be used to develop relevant PD activities across the four pillars (i.e. training, education, experience, self-development) of the CAF PD System (CAFPDS) to ensure personnel can be effectively employed.

To answer this question, it is worth considering why three independent L1 initiatives have been undertaken to institute front-end analysis processes to identify tasks, KSAs and competencies in support of PD and other human resource (HR) functions, to ensure CAF personnel are able to effectively perform in their job. Prior to identifying these initiatives, it is important to highlight that the author defines ‘front-end analysis’ as all analysis activities by L0 and L1 organizations⁷ to understand a problem or opportunity beginning with capability development through to the analysis of work requirements that support all major segments of the CAF personnel management system (i.e. military personnel production, PD, employment, career management and sustainment). The first initiative instituted in 2005 by the Royal Canadian Air Force (RCAF) uses a front-end analysis process to create a Job Task Analysis Record (JTAR). This analysis process supports needs assessments,⁸ Military Employment Structure (MES) specification

⁵ “Knowledge is an organized body of facts, principles, procedures, and information acquired over time...Knowledge is a prerequisite for learning skills...A skill is a proficiency at being able to do something rather than just knowing how to do it. By skills, we mean the capacities needed to perform a set of tasks...Attitudes are employee beliefs and opinions that support or inhibit behaviour.” Nick Blanchard and James Thacker, *Effective Training: Systems, Strategies, and Practices*, Fifth ed. (Upper Saddle River, NJ: Pearson, 2013), 17-19.

⁶ “A competency is more than just KSAs; it is the ability to integrate and use the KSAs to perform a task.” *Ibid.*, 19.

⁷ In some instances L1s may delegate front-end analysis authority to subordinate commanders or assign one or more responsibilities in support of a front-end analysis activity.

⁸ A needs assessment is another term used for front-end analysis. Within the CAF it is defined as “the systematic study of a problem or innovation incorporating data and opinions from varied sources in order to make effective recommendations or to propose valid solution.”

Department of National Defence, *Manual of Individual Training and Education: Needs Assessment* (Ottawa: DTEP, 1997), 1.

development and staffing, and individual training and education (IT&E) Quality Control activities.⁹ The second ongoing initiative by Director General Military Personnel Research and Analysis (DGMPRA) is to develop a CAF competency dictionary (CD), which is in direct support of a Chief of Military Personnel (CMP) defence renewal initiative. After the CAF CD is completed and validated it will be the basis from which a range of career management frameworks will be built including, performance appraisal, succession management and common professional development.¹⁰ The Professional Development Needs Analysis (PDNA) is the latest initiative currently being developed by the Canadian Army (CA). This initiative is intended to support MES specification development and staffing similar to the JTAR, but it will also include a broader analysis examining how job requirements and competency development for personnel will be achieved across the four PD pillars.¹¹

Each of these initiatives addresses different front-end analysis gaps that provide relevant job and competency related information for other follow-on analysis activities within the CAF personnel management system. Drawing upon the strengths of these L1 initiatives and existing CAF-wide front-end analysis activities, a framework could be developed to better synchronize analysis activities and be more responsive to changing work requirements. As such, this paper will argue that a new front-end analysis

⁹ Royal Canadian Air Force, *Job Task Analysis Record (JTAR): JTA Process Aid Memoire* (Winnipeg, MB: 2 Cdn Air Div, n.d.), 1.

¹⁰ Chief of Military Personnel, *Canadian Armed Forces Competency Dictionary* (Ottawa: DGMPRA, 2014 (draft)), 1.

¹¹ Canadian Army, *Canadian Army Order 24-08: Canadian Army IT & PME Policies and Procedures* (Kingston: COS ATA, 2014a (draft)), 16-17.

framework is required within the CAF to more effectively articulate work requirements for personnel and how they will be developed across the four pillars of the CAFPDS.

This paper first discusses how CAF work requirements have been analyzed and documented in MES specifications over the last 15 years, along with how specifications are utilized for the PD of personnel. It then examines the front-end analysis initiatives by the RCAF, DGMPRA, and CA to understand how the current gaps in CAF front-end analysis process are being addressed. Next, a new front-end analysis framework is proposed drawing upon the four needs assessment approaches identified by Kavita Gupta and the strengths from different L0 and L1 analysis processes. Finally, implications for the implementation of the proposed front-end analysis framework are explored in relation to MES specifications, CAFPDS policy, and CAF IT&E doctrine.

CAF WORK REQUIREMENTS

Defining CAF work requirements is a complex and time intensive endeavour. The Federal government's statement of national security policy and defence objectives are the basis from which the Chief of Force Development (CFD) develops broad strategic capability requirements for use in capability based planning.¹² The Environmental Chiefs of Staff (i.e. Commanders of the Royal Canadian Navy [RCN], CA, RCAF,) and other Functional L1s (e.g. Special Operation Force Command) also conduct their own capability based planning. CAF work requirements are initially identified during the capability based planning process for the three components of the CAF: the Regular

¹² Department of National Defence, *The Canadian Armed Forces Military Employment Structure: Volume 1 of 4 - General* (Ottawa, ON: DPGR, 2014a (draft)), 1-1.

Force (Reg F), the Reserve Force (Res F) and its sub-components,¹³ and the Special Force.¹⁴ Director Personnel Generation Requirements (DPGR) is the primary CAF organization responsible for further defining CAF work requirements.

DPGR's approach to determining work requirements is through a task-based job analysis. This approach was originally developed by the US Air Force during the Second World War.¹⁵ The work requirements from DPGR's job analysis activities are expressed as tasks, which are detailed within MES specifications. There are three types of specifications – General Specification (GS), Occupational Specification (OS), and Specialty Specification (SS) – that provide critical information in support of a number of HR management activities (i.e. defining and structuring work requirements, selection, PD, performance appraisal, career management, compensation and benefits). GSs define both common and applicable environmental work requirements for all officers and Non-Commissioned Members (NCMs) in the CAF across each of the developmental periods (DPs). Occupational and sub-occupational work requirements are detailed in an OS. Finally, work requirements for unique jobs, whether to one occupation or a group of occupations, are defined in a SS.¹⁶ Notwithstanding DPGR's responsibility for MES specifications, other L1 organizations can submit requests to DPGR for the creation or amendment of work requirements within a specification using a well-defined set of

¹³ "The Res F consists of officers and NCMs who are enrolled for other than continuing full-time military service when non on active serve. The Res F is further divided into sub-components comprising: primary reserve (PRes); supplementary reserve (Supp Res); COATs; and the Canadian Rangers." *Ibid.*, 2-1.

¹⁴ *Ibid.*, 1-1 – 2-1.

¹⁵ Alan Okros, "Becoming an Employer of Choice: Human Resource Challenges within DND and the CF," in *The Public Management of Defence in Canada*, ed. Craig Stone (Toronto: Breakout, 2009), 153.

¹⁶ Department of National Defence, *The Canadian Armed Forces Military Employment Structure: Volume 1 of 4 - General*, 3-3 – 3-6.

procedures. However, despite these established procedures it can be difficult to keep MES specifications current based upon the rapidly changing contemporary operating environment in which the CAF personnel work.¹⁷ Moreover, the task-based job analysis is an industrial era process that requires significant personnel resources to conduct, which has continued to be a factor on MES specification maintenance since the CAF personnel cutbacks in the 1990s.

Over the last 15 years there have been four key changes to how work requirements within MES specifications have been documented. First, in the 2000 timeframe, Director Military Human Resource Requirements (predecessor to DPGR) began the systematic removal of KSAs from OSs and skills from SS.¹⁸ The removal of KSAs was later instituted for the Officer GS (OGS) beginning in 2008 and then to the NCMGS in 2009.¹⁹ Then, in 2012, knowledge statements were removed for new SSs. These changes removed a critical connection in MES specifications, which are authoritative HR documents, between the task requirements for CAF jobs and the associated KSA requirements for the people in these jobs.

A second key change was the removal of task proficiency levels using the five-level scale with corresponding definitions. This change began with OSs in 2007 with the introduction of the Job-Based Specification (JBS) format. It then continued during the 2008/09 and 2009/10 respective rewrites of the OGS and NCMGS.

¹⁷ Department of National Defence, *Individual Training and Education Modernization Strategy* (Kingston, ON: CDA, 2011a), 7.

¹⁸ There are still some OSs in the old Integrated Occupational Specification (IOS) format that include KSAs. The IOS format was used by DMHRR prior to the implementation of the Job Based Occupational Specification (JBOS) format in the 2000 timeframe.

¹⁹ The removal KSA attributes from the OGS and NCMGS would likely have been sooner, but the last major rewrites of these documents had been in the late 1990s.

The third key change concerned how tasks were documented within OSs. This change involved having a unique list of tasks for each job description (JD).²⁰ Previously, the Job Based Occupational Specification (JBOS) format used a tabular matrix with jobs along the horizontal axis and tasks along the vertical axis, providing a holistic view of how common tasks related to different jobs across rank levels and any increasing proficiency requirements using a five point rating scale.

The last key change involved how tasks were described within the GSs. During the 2008/09 and 2009/10 rewrites DPGR directed that only the highest order verb would be used to define work requirements. To provide a distinction in the work requirements a colour code was used to identify different task proficiency increases and required PD activities across applicable rank levels in the tabular format for both the common and environmental sections.²¹ Additionally, each task statement included an indicator of the associated meta-competencies from the leadership development framework (LDF),²² although the value of this mapping activity has been questioned by the CAF Professional Development Study.²³

²⁰ “A JD is a formal document that describes the work activities that constitute a job. JDs detail all CAF occupational work and are linked to capabilities. JDs may vary in their composition...[but all] JDs will include three parts as listed below: a. job identifying information; b. Military Employment Structure; and c. Functional description.

Department of National Defence, *The Canadian Armed Forces Military Employment Structure: Volume 1 of 4 - General*, 3-6.

²¹ Green was used to identify increased proficiency gained through IT&E, blue identified an increase in proficiency gained through work experience or self-development, and grey was used to identify a new task to be gained or when a proficiency level increased through unit-based, pre-deployment or other training

²² Department of National Defence, *Canadian Forces Officer General Specification* (Ottawa, ON: DPGR, 2013), Annex C to Chapter 2.

²³ Canadian Defence Academy, *Tier 2 - Officer Report for CAF PDS Study* (Kingston, ON: CDA, 2013 (draft)), 7.

Tasks detailed within MES specifications are linked to either IT&E or experience qualifications. This determination occurs during the Qualification Requirements Assessment (QRA), which is part of phase three (structure analysis) of the DPGR led job analysis process.²⁴ When there is an IT&E qualification requirement, the associated tasks become the primary input into the six-phase Quality Control Process of the CAF IT&E system. Training Authorities (TAs) and Designated TAs (DTAs) use the associated tasks during the Analysis phase of the Quality Control Process to develop performance objectives (POs) that “capture the required outcome of IT&E in terms of essential on-job performance.”²⁵ The removal of KSAs, proficiency levels for tasks, linkages between common tasks within an occupation and use of only one verb have made it progressively more challenging for TA/DTA staff to develop POs over the last 15 years. This is because less work requirement information is now readily available during the Analysis phase, which is normally conducted within tight time constraints due to the limited availability of subject matter experts (SMEs). Notwithstanding these challenges TAs/DTAs are able to use these POs to design IT&E programmes, which when conducted result in the awarding of the applicable IT&E qualification.

Entire jobs and associated tasks documented within MES specifications can also be selected for experience qualifications.²⁶ The process to ensure requisite proficiency is achieved during employment in the applicable job(s) prior to the awarding an experience

²⁴ Department of National Defence, *The Canadian Armed Forces Military Employment Structure: Volume 1 of 4 - General*, 4-4.

²⁵ Department of National Defence, *Manual of Individual Training and Education: Interim Guidance - CFITES Introduction/Description* (Kingston: CDA, n.d.), 14.

²⁶ Department of National Defence, *The Canadian Armed Forces Military Employment Structure: Volume 1 of 4 - General*, 4-4.

qualification is identified in the applicable specification and can include “post[ing] to a position, OJT X (number of months), sea time, flying hours, field time or any combination of the above.”²⁷

FRONT-END ANALYSIS INITIATIVES

RCAF - Job Task Analysis Record (JTAR)

The JTAR was instituted by the RCAF in 2005 to assist with the conduct of needs assessments, MES specification development and staffing, and IT&E Quality Control

activities as shown in Figure 1. The JTAR is the end product of a job task analysis (JTA) process and contains two key descriptors of CAF work requirements: tasks performed for the job(s) and applicable KSAs required of personnel to accomplish

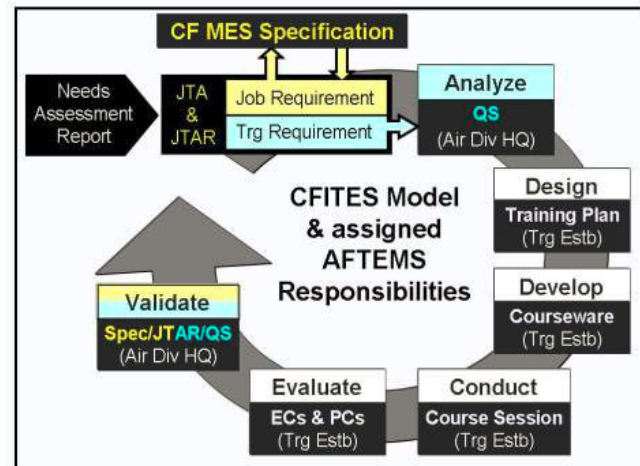


Figure 1: JTAR relationship to the CF MES and CFITES

the tasks. A critical element of the JTAR matrix is the linking of individual tasks to individual KSAs. Another key element is that all tasks and KSAs are assigned proficiency levels, based upon pre-established sets of 5-level definitions.²⁸

The final step of the JTA is to identify those tasks requiring IT&E. The RCAF recognizes that IT&E may not bring personnel to JTAR proficiency levels for all identified ‘train tasks’, in which case an OJT strategy can be used for subsequent

²⁷ Director Personnel Generation Requirements, "SPQR/SS/EQ Attachment 1 Writing Guide," in *Special Personnel Qualification Requirement (SPQR) - Attachment IDPGR*, 2013), 2.

²⁸ Royal Canadian Air Force, *Job Task Analysis Record (JTAR): JTA Process Aid Memoire*, 1-4.

development of personnel until they reach the necessary level of proficiency. The JTAR clearly addresses some of the work requirement components or descriptors that have been systematically removed from MES specifications over the last 15 years. The value of this additional front-end analysis activity is that it provides more work requirements information to support the Quality Control Process phases for the development of effective IT&E programmes and formalized OJT.

The JTA used by the RCAF to develop the JTAR closely follows the combination job analysis method (C-JAM) defined by Brannick, Levine and Morgeson.²⁹ The C-JAM has been successfully applied in various work contexts, including government agencies. One of their finding is the C-JAM is “relatively easy to achieve reliable evaluations of perceptions or concrete objects, and relatively difficult to achieve reliable evaluations of concepts and abstract objects.”³⁰ As such, the C-JAM is likely well suited to many of the RCAF work requirements that deal with technical equipment and well defined procedures.

DGMPRA – CAF Competency Dictionary (CD)

The CAF CD, currently being developed by DGMPRA, is based upon the LDF that was created by the Canadian Forces Leadership Institute (CFLI) in 2006. The LDF is a competency-based framework that is intended to provide a progressive leader developmental process for officers and NCMs across the five meta-competencies of expertise, cognitive capacities, social capacities, change capacities, and professional

²⁹ Michael Brannick, Edward Levine and Frederick Morgeson, "Job and Work Analysis," (2007), 91-104.

³⁰ *Ibid*, 104.

ideology.³¹ An overview of the LDF and mapping of the meta-competencies against the common and environmental tasks was included in the OGS and NCMGS during the rewrites that occurred in 2008/09 and 2009/10 respectively. However, this did little to operationalize the LDF.³²

The recent efforts by DGMPRA have merged two previous CDs reflective of the LDF, resulting in 17 competencies being mapped against the five meta-competencies. Each competency is then described using behaviour indicators (BI) for each rank level.³³ It is relevant to highlight that many of the gaps in the OGS identified by the CAF PD Study³⁴ have been addressed within the latest draft of the CAF CD; especially when the intent is that CAF CD will serve as the authoritative document from “which a range of career management frameworks will be built, including frameworks for performance appraisal, succession management, and professional development”³⁵ after it is validated.

A competency-based approach such as the LDF puts the focus of the front-end analysis on the individual not the job.³⁶ This is a significant shift from the task-based job analysis used by DPGR. However, given the current work environment where CAF job descriptions may change quickly, a competency-based approach can be extremely useful as competencies identify capabilities that can enable personnel to adapt to changes.³⁷ Moreover, a competency-based approach is most effective “when competencies for

³¹ Robert Walker, *The Professional Development Framework: Generating Effectiveness in Canadian Forces Leadership* (Kingston, ON: CFLI, 2006), 31.

³² Canadian Defence Academy, *Tier 2 - Officer Report for CAFPDS Study*, 7.

³³ Chief of Military Personnel, *Canadian Armed Forces Competency Dictionary*, 1.

³⁴ Canadian Defence Academy, *Tier 2 - Officer Report for CAFPDS Study*, 8-9.

³⁵ Chief of Military Personnel, *Canadian Armed Forces Competency Dictionary*, 1.

³⁶ William Rothwell and James Graber, *Competency-Based Training Basics* (East Peoria, IL: ASTD, 2010), 8.

³⁷ Blanchard and Thacker, *Effective Training: Systems, Strategies, and Practices*, 109.

management, supervisory, or professional jobs must be identified”³⁸ which aligns well with the LDF that focuses on the development of ‘leaders’.

Canadian Army – Professional Development Needs Analysis (PDNA)

The PDNA is a new front-end analysis process currently being developed by the CA. Similar to the JTAR, the PDNA will determine job related tasks and KSAs with proficiency levels that can be used for MES specification development or amendments. However, the PDNA also includes an analysis of how people will be developed in one or more of the PD pillars.³⁹ The CA PD Framework (Figure 2) outlines the sub-components of the four PD pillars to further demonstrate how broadly personnel can be developed, drawing upon direction from the three different types of MES specifications.⁴⁰

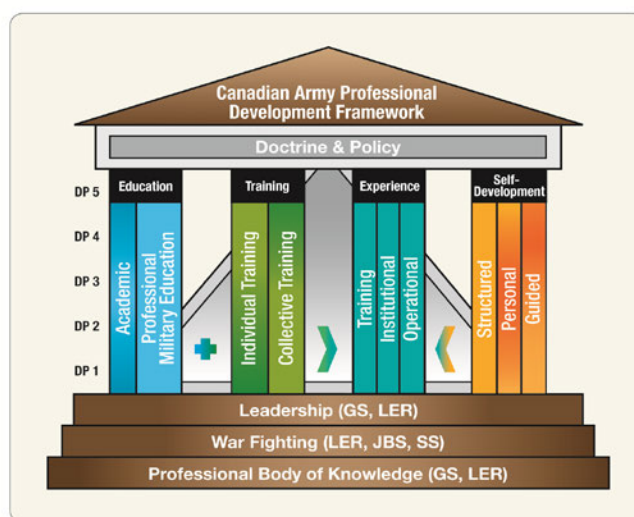


Figure 2 – Canadian Army Professional Development Framework

In comparing the PDNA to the task-based job analysis used by DPGR there are similarities, but also some key differences. Both front-end analysis processes focus on a task-based job analysis. Additionally, the PDNA considers IT&E and experience

³⁸ Kavita Gupta, *A Practical Guide to Needs Assessment* (San Francisco, CA: Jossey-Bass, 1999), 65.

³⁹ Canadian Army, *Canadian Army Order 24-08: Canadian Army IT & PME Policies and Procedures*, 16-17.

⁴⁰ Canadian Army, *Training for Land Operations* (Kingston: COS ATA, 2014b (draft)), 3-3.

requirements as determined during the QRA. One of the differences is that the PDNA will also examine self-development requirements. Another key difference is how the PDNA considers team level and above work requirements within the context of collective training (CT), while DPGR's focus is entirely on individual job requirements. After CT requirements are defined during the PDNA they become the input to the CA CT System that uses a six-phase systems approach to training model (called ASAT⁴¹) to design, conduct and evaluate collective training.⁴²

A NEW CAF FRONT-END ANALYSIS FRAMEWORK

The conduct of front-end analysis activities and how they influence the PD of personnel are not well understood across the CAF because there is currently no comprehensive framework or doctrine. DPGR will soon be publishing a MES Manual⁴³ and DAOD 5070-1 MES Framework,⁴⁴ which will assist in bringing about a greater understanding of task-based job analysis processes and authorities. However, as seen by the L1 initiatives in the previous section there are still front-end analysis activities that need to be captured within a broader framework. Thus, the framework shown in Figure 3 comprising of four component areas of analysis – capability based planning, competency-based analysis, task-based job analysis, and PD needs analysis – is proposed to close

⁴¹ The Army Systems Approach to Training (ASAT) provides a means to derive PD requirements, deliver training (IT and CT) and professional military education, and incorporate lessons learned into all aspects of the training system.

Canadian Army, *Training for Land Operations*, 4-3.

⁴² *Ibid.*, 6-1 – 6-40.

⁴³ Department of National Defence, *The Canadian Armed Forces Military Employment Structure: Volume 1 of 4 - General*.

⁴⁴ Department of National Defence, *DAOD 5070-1 Military Employment Structure Framework* (Ottawa, ON: DPGR, 2014b (draft)).

these existing systemic gaps. The framework will have three essential characterises. First it will establish a structure for all front-end analysis activities, which can assist in furthering understanding of assigned authorities and responsibilities. Second, it will be flexible in the type and depth of front-end analysis activities undertaken. Finally, outputs from the four component analysis areas in the framework will inform follow-on analysis activities both within the framework and other HR systems; with the key focus of this paper being on the CAFPDS. In developing this new CAF front-end analysis framework the author has drawn upon the different L0 and L1 analysis activities, along with Kavita Gupta's four needs assessment approaches that include strategic needs assessment, competency-based needs assessment, job and task analysis, and training needs assessment.⁴⁵

⁴⁵ Gupta, *A Practical Guide to Needs Assessment*, 10.

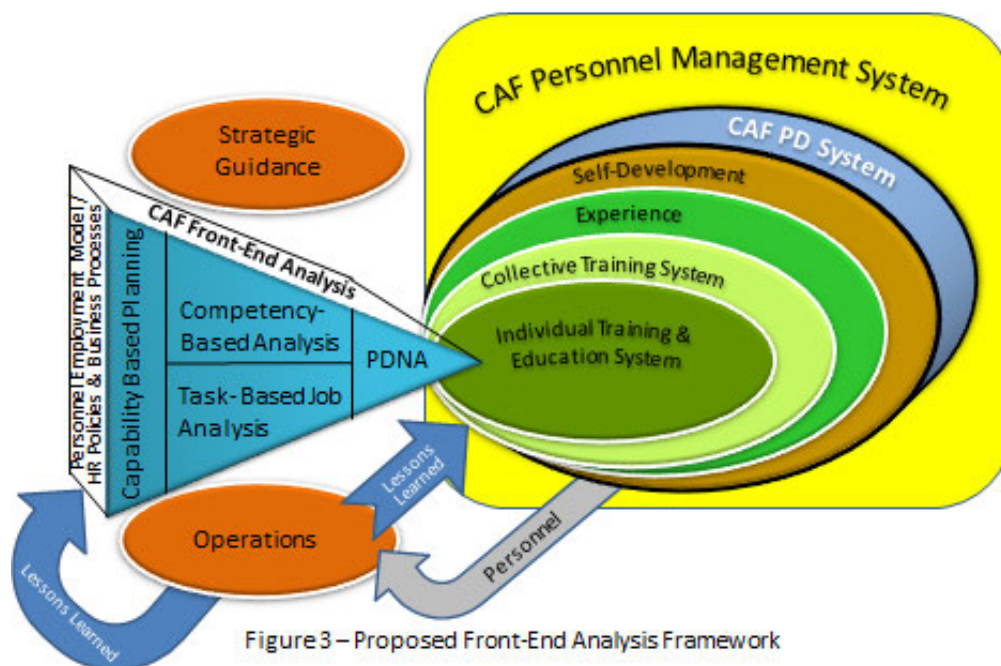


Figure 3 – Proposed Front-End Analysis Framework

Before discussing the proposed front-end analysis framework it is important to recognize that L1s and subordinate units working in support of the CAFDPS also use the term needs assessment. Within CAF IT&E doctrine needs assessment is defined as:

the systematic study of a problem or innovation incorporating data and opinions from varied sources in order to make effective recommendations or to propose valid solutions. It is a strategic level process that permits training staff to target needs that may best be addressed by training, or by solutions other than training.

One of the main issues with needs assessment in the CAF is that despite it being described as a ‘strategic’ level process, it can be applied at any level within the institution to examine a performance gap or opportunity and is not limited to training staff.⁴⁶

Additionally, there are no clear linkages within the CAF needs assessment doctrine as to

⁴⁶ Joe Willmore, "The Evolution of Human Performance Improvement," in *ASTD Handbook for Workplace Learning Professionals*, ed. Elaine Biech (Alexandria, VA: ASTD Press, 2008), 42-44.

how its processes relate to capability based planning and development of MES specifications, the latter being the key driver to changes within the CAF personnel management system. Moreover, existing needs assessment doctrine only provides a generalized five step model, which makes it challenging for HR professionals to use it in helping address performance gaps or opportunities.

To determine requirements for the new framework, Gupta's strategic needs assessment was the first approach examined and compared with CAF front-end analysis activities. Gupta indicates this level of analysis requires the most time and rigor, and its purpose is to "examine existing performance problems (reactive) or address new and future performance needs (proactive) in the context of an organization's business strategy."⁴⁷ Within the CAF, this level of analysis can be equated to the force development activities and strategic level HR analysis that would be linked to departmental policies or business processes. The value of a strategic needs assessment is its ability to develop long term solutions to existing performance gaps or future performance needs, elimination of non-value capabilities and activities, and its ability to resolve problems related to core business processes.⁴⁸

Since 2005, there has been significant refinement in the capability based planning process after the Chief of Defence Staff (CDS) directed that "CFD would control national and joint force development activities and would integrate and synchronize the force development activities of the Environmental Chiefs of Staff and Functional L1s."⁴⁹

⁴⁷ Gupta, *A Practical Guide to Needs Assessment*, 11.

⁴⁸ *Ibid.*, 11.

⁴⁹ Department of National Defence, *Capability Based Planning Handbook* (Ottawa, ON: CFD, 2010), 6.

Additionally, another of the major responsibilities for CFD is to lead the production of departmental strategy⁵⁰ helping to ensure capability based planning activities are aligned with departmental strategic objectives. As such, initial identification of CAF work requirements derived from the capability based planning activities should continue to be the inputs for DPGR or other L1s involved with further defining job or competency requirements in the subsequent front-end analysis activities.

Authority for strategic HR management functions and business processes within the CAF is assigned to CMP.⁵¹ From a strategic needs assessment perspective, CMP addresses HR gaps or opportunities through departmental policies, ensuring they are aligned with the CAF's employment model. Furthermore, if there are inefficiencies in any of the core HR business processes that impact organizational performance it is within CMP's authority to modify them. Therefore, the outputs from a CMP strategic needs assessment would influence processes or activities within the proposed framework, but not necessarily provide direct inputs to other organizations for follow-on front-end analysis activities.

Gupta's competency-based assessment was the second needs assessment approach compared with current CAF front-end analysis activities. A competency-based assessment focuses on the individual, not the job, identifying capabilities that are

⁵⁰ Department of National Defence, *VCDS Direction - Alignment of CFD and C Prog 1950-1 (DDSM)* (Ottawa, ON: VCDS, 2011b), 6.

⁵¹ Department of National Defence, "Governance Framework," CMP, <http://cmp-cpm.forces.mil.ca/sf-cs/index-eng.asp> (accessed May/01, 2014).

transferable across more than one job and enables personnel to successfully adapt to changes in their work environment.⁵² Gupta recommends this approach for use to:

identify competencies for managerial, supervisory, or professional job; measure proficiency levels of people; develop standardized training; [and] develop performance management systems (recruiting, hiring, promoting, or career planning).⁵³

This type of approach is being used by DGMPRA for the development of the CAF CD, as identified previously, and is ideal given the LDF is focused on the broad development of ‘leaders’ and the intent for the CAF CD to be linked to performance appraisal, succession management, and professional development. The LDF and its associated CAF CD is classified as a core competency model according to Rothwell and Graber, as it applies to all officers and NCMs in the CAF.⁵⁴ Other relevant competency models for the CAF could include: job family model, job level model, role model. Rothwell and Graber suggest that “one level of a competency model (such as a core competencies or job family competencies) is often used as a starting point for developing other competency models (such as a job competency models) more quickly and consistently.”⁵⁵ As such, the LDF and CAF CD could be used as the foundation from which other competency models could be developed to address job requirements within an occupation or generic CAF jobs.

The inclusion of competency-based assessment in the front-end analysis framework provides flexibility to the CAF in how it defines work requirements,

⁵² Blanchard and Thacker, *Effective Training: Systems, Strategies, and Practices*, 109

⁵³ Gupta, *A Practical Guide to Needs Assessment*, 12.

⁵⁴ Rothwell and Graber, *Competency-Based Training Basics*, 108.

⁵⁵ *Ibid.*

especially for supervisory and managerial jobs, or jobs that may undergo constant dynamic change. The outputs of a competency-based assessment are a competency model and/or a competency dictionary.⁵⁶ Both these outputs can inform other front-end analysis activities (i.e. task-based job analysis and PDNA) and provide inputs into the CAFPDS and the broader CAF personnel management system.

The job and task analysis was the third approach examined for relevance in the front-end analysis framework. The purpose of this approach is to define the responsibilities and tasks required to perform a job, and recommended for use when:

Develop[ing] new job descriptions or revis[ing] existing position profiles; indentify[ing] task listings for new or redesigned job function(s): knowledge, skills and abilities, and standards; [and] develop[ing] consisting training requirements, especially for technical and specialized jobs.⁵⁷

Within the CAF, this type of approach partially aligns with the task-based job analysis employed by DPGR, but is closer aligned with the JTAR and PDNA. The reasoning is that a key part of Gupta's job and task analysis process involves determining the KSAs requirements. As mentioned previously, DPGR's job analysis approach has moved away from the identification of KSAs over the last 15 years. The importance of identifying KSAs during a job analysis comes from the crucial information it provides for personnel selection and training.⁵⁸ The identification of KSAs will become more important with the adoption of the LDF/CAF CD and other potential competency models. This is based upon the recommendation that organizations deciding "to use competencies should not

⁵⁶ Gupta, *A Practical Guide to Needs Assessment*, 12.

⁵⁷ *Ibid.*, 13.

⁵⁸ Brannick, Levine and Morgeson, *Job and Work Analysis*, 101.

abandon job analysis, but use its methodology to demonstrate the link between relevant KSAs and key competencies of the job.”⁵⁹ Gupta’s job and task analysis approach also includes the identification of training requirements, which is similar to DPGR’s QRA process that identifies IT&E and experience qualification requirements. This high level analysis of IT&E and experience requirements is important as it allows for strategic level direction on how resources will be employed in the PD of personnel.

Task-based job analysis has been effectively employed in the CAF for years, although approaches have varied (i.e. DPGR moving to only identifying tasks while the RCAF includes KSAs). As such, it should remain a key approach to identifying work requirements in the proposed front-end analysis framework. The outputs of the task-based analysis are the MES specifications, which will inform other front-end analysis activities (i.e. competency-based analysis and PDNA). It is recommended that all task-based job analysis outputs in the future include KSAs based upon their importance for follow-on activities in the CAFPDS and the broader CAF personnel management system.

The training needs assessment was the final approach examined, which focuses on identifying KSAs to perform a job and prescribing interventions that can close performance gaps.⁶⁰ An organization can use this approach “when a new system or technology must be implemented, when existing training programs must be revised or updated, [or] when new job responsibilities must be assumed by people.”⁶¹ The JTAR process and PDNA both align closely with this approach in terms of identifying job tasks

⁵⁹ Blanchard and Thacker, *Effective Training: Systems, Strategies, and Practices*, 111.

⁶⁰ Gupta, *A Practical Guide to Needs Assessment*, 115

⁶¹ *Ibid.*

(that are forwarded to DPGR using applicable specification staffing procedures), along with identifying of KSAs for L1 use. However, the second aspect of prescribing interventions as defined by Gupta crosses into CAF IT&E Quality Control Processes (i.e. Analysis and Design),⁶² and do not fall within front-end analysis framework. However, from a L1 perspective there is still value in examining the range of potential PD activities beyond just IT&E.

In the proposed framework, the PDNA would include analysis of job requirements, if not completed previously, but the focus would be on analyzing potential PD activities across the sub-components of the four pillars of training, education, experience and self-development as shown in Figure 2 to provide strategic direction for follow-on analysis processes in the CAFPDS. This expanded training needs analysis process is based on the CA's initiative currently being developed and would be a new front-end analysis process for all other L1s.

Another critical component of the proposed front-end analysis framework is establishing a clear linkage with the lessons learned processes employed within the CAF. Lessons identified during operations are essential inputs that can be relevant to any of the four component area of analysis in the framework. Additionally, it is important to recognize that lessons identified, where applicable, also need to be fed directly back into the CAFPDS or the CAF personnel management systems.

After examining Gupta's four needs assessment approaches with the current L0 and L1 front-end analysis activities, the proposed framework shown in Figure 3 draws upon strengths of all approaches and addresses existing front-end analysis gaps.

⁶² *Ibid.*, 130.

However, unlike Gupta's needs assessment approaches being separate activities, the framework links the different CAF front-end analysis processes conducted across L0 and L1 organizations, allowing for the division of front-end analysis activities into manageable chunks. The analysis can also be iterative based upon feedback from within the framework, lessons learned or other HR management functional processes. Despite these advantages there could be opposition to adopting the proposed framework.

Opponents could argue the front-end analysis framework would increase the amount of work for analysis activities, lead to a duplication of work, or reduce the flexibility of L1s by imposing new analysis processes. Each of these concerns can be easily addressed. First, the framework will not increase work as CFD and the L1s are already heavily engaged in conducting these front-end analysis activities, with the exception of the PDNA that will be addressed separately. Second, as the framework will help in establishing a better understanding of existing L0 and L1 front-end analysis authorities and responsibilities, this will assist in ensuring work is not duplicated. Finally, the framework is meant to be flexible in its approach allowing for analysis to occur only at the required levels, skipping some levels if warranted. This flexibility can be applied to the PDNA portion of the framework, allowing L1s to skip this component area and thereby address any potential workload issues. However, this component area of analysis can be viewed as an up-front investment to help ensure the PD activities selected will be the best methods to achieve optimum performance from personnel within available

resource allocations, which is especially important as “not all intervention opportunities are of equal value.”⁶³

IMPLICATIONS

Adoption of the new front-end analysis framework would have implications for MES specifications, CAFPDS policy, and CAF IT&E doctrine. Implications for each of these areas will be examined beginning with MES specifications.

Incorporating Competency Dictionaries

MES specifications are the primary documents influencing the activities in the CAFPDS and the broader CAF personnel management system.⁶⁴ The development of the CAF CD or any other CD requires either the recognition of CDs being a new authoritative document for HR management activities or incorporating them into existing specifications. The recommended approach would be to incorporate CDs into existing specifications to alleviate having multiple documents guiding HR activities and minimize duplication of information. Either approach will necessitate an updating of the MES manual.

⁶³ Dean R. Spitzer, Chapter 8 – The Design and Development of Effective Interventions. *Handbook of Human Performance Technology*, 117.

⁶⁴ Department of National Defence, *The Canadian Armed Forces Military Employment Structure: Volume 1 of 4 – General*, 1-2.

Reintroduction of KSAs

The requirement for identification of KSAs during the task-based job analysis to support personnel selection and IT&E activities, along with ensuring competencies defined in CDs can be linked to job requirements was raised in the previous section. However, MES specifications have moved away from providing this information over the last 15 years. As such, consideration should be given for the reintroduction of KSAs into specifications or finding a way of linking L1 KSA data with MES specification task lists. Existing databases such as the Integrated Systems Approach to Training (ISAT) may provide a workable interim solution and should be considered as an option to address this issue.

MES Specification Updates

One of the recommendations in the IT&E Modernization Strategy is for the MES and IT&E system to be “jointly responsive to changing capabilities, doctrine, and tactics, techniques and procedures.”⁶⁵ This recommendation is directly linked to how quickly specifications, especially the task lists (and potentially competencies, BIs and KSAs in the future), can be updated. Given the limited number of personnel in DPGR and the L1s involved in MES specification upkeep, resulting from front-end analysis activities, it may be time to re-think the current time-intensive staffing requirements to amend existing specifications. With many of the L1s having personnel dedicated to the staffing of new specifications and upkeep of existing specifications, an expertise has developed outside

⁶⁵ Department of National Defence, *Individual Training and Education Modernization Strategy*, 7.

of DPGR over the last 10 plus years. If tasks, competencies, BIs and KSAs associated with approved specifications were managed in a shareable database, this expertise could be leveraged by assigning permissions to personnel outside of DPGR to upkeep this information. This delegation of specification maintenance for minor changes would go a long way to ensure specifications provided an accurate description of current work requirements.

Clarifying Sub-Components of the CAFPDS Pillars

The CAFPDS as defined in DAOD 5031-8 provides only a general description of the four pillars of education, training, experience and self-development.⁶⁶ With the PDNA focusing on examining PD interventions across the sub-components of these four pillars, it would be useful to define these PD pillar sub-components in DAOD 5031-8. This DAOD also needs to be updated to reflect the new qualifications developed after the implementation of the JBS (e.g. no mention is made of experiential qualifications for rank progression). These changes could assist CAF organizations in recognizing there is broader range of PD options (i.e. not just IT&E), and emphasize the importance of examining how KSAs and competencies are developed over a career across all four PD pillars.

⁶⁶ Department of National Defence, *DAOD 5031-8 Canadian Forces Professional Development* (Ottawa, ON, 2012), paragraph 4.2.

Manual of IT&E – Needs Assessment

Adoption of the new framework would require the Manual of IT&E for Needs Assessment to be updated to provide an overview of the front-end analysis framework and its components, including the lesson learned process. Consideration should also be given concerning the usefulness in continuing to define a separate needs assessment process, as all front-end analysis processes are a form of need assessment, and the lessons learned process can capture all of the general 'causes' to a performance problem.

Manual of IT&E – Analysis of Instructional Requirements

There are two implications for this doctrine manual. First, with the adoption of the PDNA, there is a need to better capture the continuum of PD activities during the Analysis phase to ensure IT&E programmes provide the required level of instruction. Examination of the processes used for the development of DPs 1-5 Officer Common Qualification Standard would be recommended in updating of the Analysis phase doctrine. Second, there is a requirement to re-examination existing doctrine guiding the development of Qualification Standards during the Analysis phase with the introduction of CDs. This is because the level of information in a CD is much more comprehensive than the current list of tasks in MES specifications, with competencies being very well defined and BIs providing a clear identification of observable and measurable performance expectations similar to what is described in a PO standard.

CONCLUSION

There are currently front-end analysis gaps that need to be addressed to ensure the CAF can effectively identify job and competency requirements from which effective PD activities can be developed. Drawing upon the strengths from existing CAF-wide front-end analysis processes and L1 initiatives, a framework has been proposed that encompasses analysis activities in four component areas: capability based planning, task-based job analysis, competency-based analysis, and PD needs analysis. The proposed framework provides a structure for all front-end analysis activities, but still remains flexible in the type and depth of front-end analysis activities undertaken. Additionally, the outputs from the analysis activities within the framework can inform follow-on analysis activities both within the framework and other personnel management systems. Having a clear definition of job and competency requirements resulting from these front-end analysis processes can assist in synchronizing activities within CAFPDS, and ensure efficient use of financial resources and PD time requirements. Moreover, the proposed framework recognizes the importance of feedback from operations to inform follow-on cycles of front-end analysis and CAFPDS activities to meet changing job and competency requirements. Given that people are the CAF's most important resource it is critical to have a front-end analysis framework that can effectively define job and competency requirements in an efficient manner, to help ensure appropriate follow-on PD activities are developed so that personnel can be successful in a dynamic work environment.

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