Systematic Approach to Upskilling Learning Professionals for the Development of Modernized Training

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ABSTRACT

Training is the backbone of the United States Coast Guard (USCG) Mission Ready Total Workforce Framework designed to facilitate professional growth. However, today's USCG training experiences do not align with the current state or future world that is becoming increasingly virtual and customizable. To maintain a competitive advantage, the USCG seeks to modernize its approach to training. The USCG published an action plan, entitled Modernized Ready Learning (MRL), to initiate course correction necessary to execute the transformation. Although the service has ongoing efforts to modernize enterprise performance solutions, the service has yet to meet its full potential. To meet the organization's intent of developing individually tailored, on-demand, and modernized learning for the continuous professional and personal growth of our workforce, the USCG must ensure its instructional system designers (ISDs), multimedia developers, and instructors have the required skills and resources.

The purpose of this paper is to identify the competencies required of ISDs, multimedia developers, and instructors to produce training and performance support products for a modernized training ecosystem. To yield measurable results and close performance gaps, implied by the MRL call to action, the USCG took a systematic approach towards defining a model for implementing the four tenants of MRL: maximize training opportunities, modernize training delivery, tailor training programs, and advance workforce resilience through training. USCG analysts developed three competency models to serve as the desired state of performance for the target audience, aimed at fostering continuous skill acquisition throughout a member's career. After identifying gaps between the current and desired state, along with the associated barriers, the analysts provided recommendations to close the gaps, bringing the organization closer to realizing the goals of the MRL strategic vison.

ABOUT THE AUTHORS

LCDR Christie Smith is an active-duty instructional systems designer and performance consultant for the U.S. Coast Guard (USCG). Building off an undergraduate degree in Graphic Design, LCDR Smith earned her M.S. in Instructional Design and Technology from Old Dominion University. As the Section Chief for the Force Readiness Command Enterprise Performance Solutions Branch, she manages a team that sets the standards for Advanced Distributed Learning for the USCG. Her team works towards modernizing the USCG training ecosystems, through the combination of advances in learning theory, research, and technology. Previous to her work in the Coast Guard training system, LCDR Smith served in the operational field of Marine Safety and Commercial Vessel Inspections throughout the East Coast.

Courtney Zollicoffer is the Assistant Chief for Enterprise Performance Solutions, a branch of the Training Division of Coast Guard Force Readiness Command (FORCECOM). After earning her M.S. in Instructional Design and Technology from Old Dominion University, she transitioned from classroom teacher to instructional design and development of advanced distributed learning (ADL) solutions, specializing in self-paced eLearning. In her current role, her primary duties include oversight of the design, development, quality assurance, functionality testing, and lifecycle maintenance of products hosted on the Coast Guard's Learning Management System and support of enterprise architecture requests for developing ADL solutions, leveraging emerging technology.

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INTRODUCTION

Training is the backbone of a Mission Ready Total Workforce Framework designed to facilitate professional growth. However, today's training experiences in the United States Coast Guard (USCG) do not align with the current state or future world that is becoming increasingly virtual and customizable. To maintain a competitive advantage, the USCG's approach to training must be transformed. When striving for "modernization," the USCG must adapt and keep pace with the trends of technology. Maintaining currency implies consistent upskilling is occurring across all staff supporting the training ecosystem. Accordingly, the organization's Commandant released two strategic documents outlining the USCG's plan to transform the current training system into a reliable foundation and resource that aligns with industry standards and meets the members' needs when they need it most. Modernized Ready Learning (MRL) represents the course correction necessary to execute the transformation. The four priorities of MRL are to maximize training opportunities, modernize training delivery, tailor training programs, and advance workforce resilience through training.

The USCG has many ongoing efforts to modernize enterprise performance solutions, but to meet the Commandant's intent of developing individually tailored, on-demand, and modernized learning for the continuous professional and personal growth of our workforce, the Service must ensure their instructional systems designers (ISDs), instructors, Contracting Officer Representatives (CORs), and multimedia developers (MMD)[1] (furthermore referred to collectively as *learning professionals*) have the required skills and resources to execute the mission. Therefore, we established and lead an MRL Upskilling Charter of performance analysts spanning the USCG Training Command to conduct a needs assessment, identify performance gaps, and address barriers inhibiting the USCG's ability to achieve a systematic, modernized training ecosystem.

Background

Because MRL is ambiguous, ill-defined, and requires a diverse set of people, skills, and resources to implement, we needed a framework to translate MRL into measurable knowledge, skills, and abilities for learning professionals. Additionally, this framework should help us identify organizational or process-level factors that could either facilitate or hinder the achievement of MRL. Therefore, we first defined MRL as a combination of processes, methodologies, learning theories, tools, data management, technology, and training modalities. We then applied Dr. Geary Rummler's Anatomy of Performance framework to connect the diverse roles and skills required for MRL implementation. This framework allowed us to view USCG Training Command (FORCECOM) as a complex system of interconnected subsystems, contextualizing MRL as the inputs and outputs within this system.

Therefore, to diagnose why FORCECOM staff have not yet reached the full potential of MRL, we investigated the interdependent FORCECOM roles (people) as systems and the associated processes that contribute to their desired outputs. Although there are many processes within each of FORCECOM's systems, Figure 1 represents the systematic process of creating a training intervention for the USCG. This perspective illustrates why one isolated role or process cannot successfully produce MRL, as each sub-processes' output becomes the input into the connecting sub-system.

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[1] Multimedia Developers (MMD) is a broad term used to encompass the various competencies required to develop multimedia assets in support of training interventions. This includes roles such as audiovisual professionals, graphic artists, and programmers. In USCG government service, this role is typically associated with the GS-1084 (Visual Information Series) and GS-2210 (Information Technology Management Series) positions.

Each of the targeted roles in the FORCECOM Training Anatomy of Performance makes up its own Human Performance System (HPS). The HPS has six factors that can impact performance: task support, performance specifications, consequences, feedback, skills and knowledge, and individual capacity (Rummler, 2006). This perspective of zooming in on the training ecosystem serves as an effective diagnostic tool to describe the variables that influence the behavior of a person within a system.

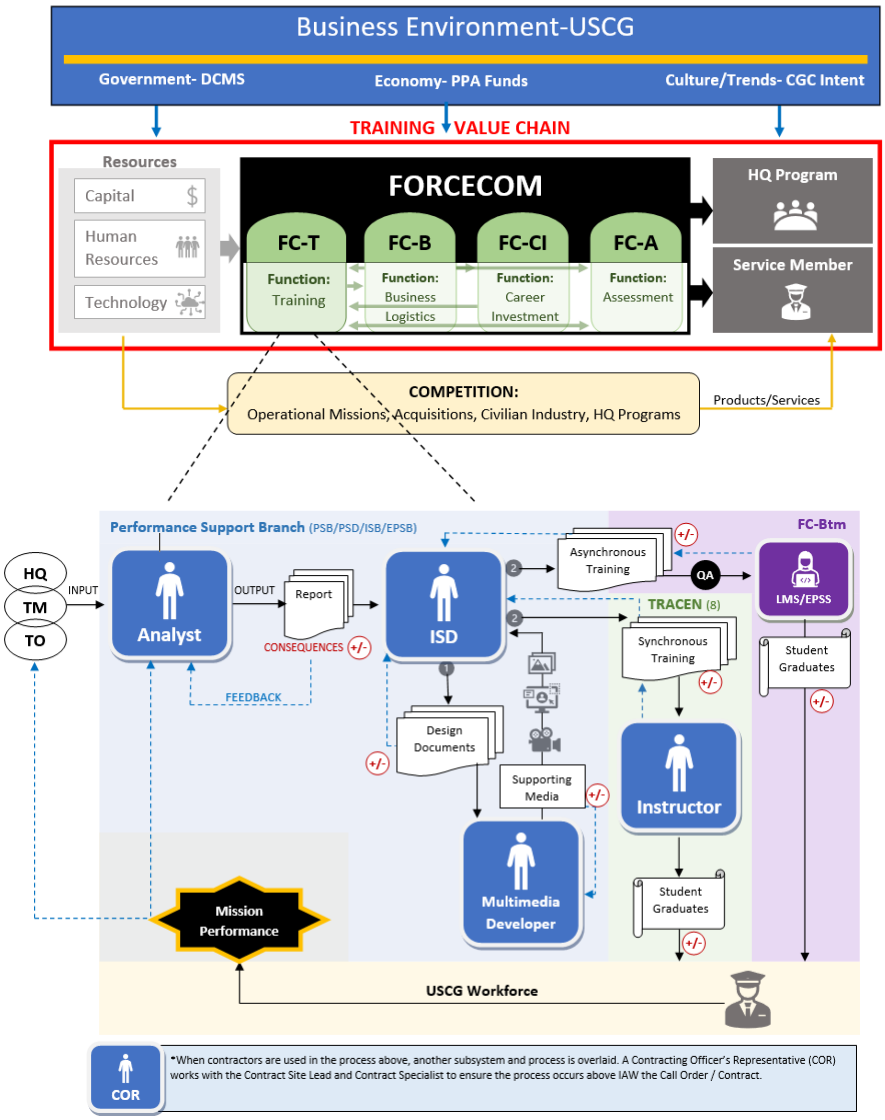

Figure 1 - Training Intervention Anatomy of Performance

By viewing MRL shortcomings through a micro view via the HPS model and following its connection to the larger training ecosystem, FORCECOM leadership can better understand barriers to MRL goals and its associated causal factors beyond a knowledge, skills, or ability gap of the learning professionals.

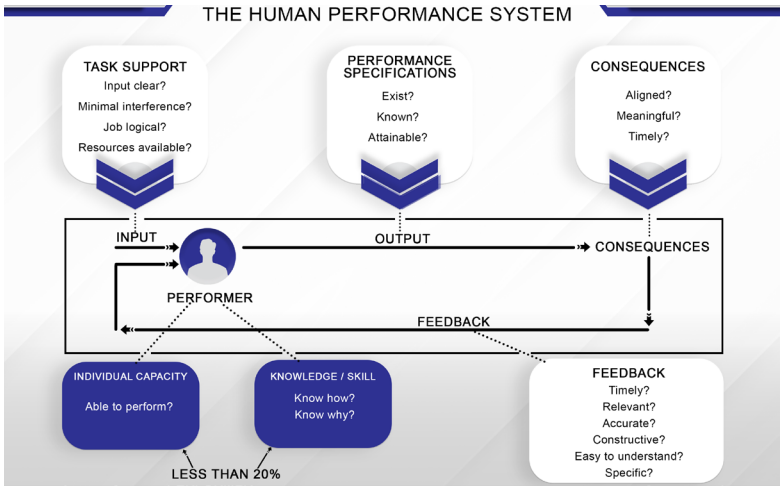

Figure 1 - Factors Affecting the Human Performance System

METHOD

Overview

To map out the various Human Performance Systems within the training ecosystem, we collected data via interviews with subject matter experts (SME) and accomplished performers (AP), multiple focus groups, and an extensive review of extant data.

Phase 1: Performance Analysis

The MRL Upskilling Charter identified key documents, past Job Task Analysis, and industry standards for extant data review, then prepared an optimal state competency model used during survey and focus group topic development. The Charter focused the optimal state on upskilling rather than a reskilling approach, as reskilling would imply retraining members to take on new trades or roles, while upskilling members in current roles to meet the requirements of MRL is better aligned with the needs of the service. A competency model was developed for each Human Performance System. The competency models were influenced by USCG Organizational Strategy Documents, U.S. Air Force's GS-1750 competency study structure, International Board of Standards for Training competency (IBSTPI) models, Association for Talent Development (ATD) Capability Model, various higher education course requirements and curriculum, USCG FORCECOM Standard Operating Procedure Volume 13 Professional Development Standard Operating Procedures, and subject matter expert (SME) input.

To address upskilling specifically, the Charter proposed an update to FORCECOM's current qualification structure by benchmarking industry standards. To encourage continued professional development throughout one's career and to maintain currency with industry, the competency models were developed to show progressive skill acquisition from apprentice and journeyman through mastery. The structure of continued professional development was influenced by the Air Force's competency model approach. Each competency was also influenced by IBSTPI's hierarchy (IBSTPI, 2012), including:

- Domain - Broad areas of competence required for a position
- Competencies - Specific areas of competence within a domain
- Performance Standards - Underlying skills needed for each competency

Table 1: Summary of Competencies for Learning Professionals

Competency[2]	ISD	Instructor	MMD
Communication	■	■	■
Emotional Intelligence		■	
Learning and Educational Practices	■	■	■
Professional Currency	■	■	■
Ethics	■	■	■
Preparing for Instruction		■	
Engaging Learners		■	
Adapting instruction to learners and learning environment		■	
Promoting learning through feedback		■	
Promoting retention of knowledge skills and attitudes & abilities		■	
Promoting transfer of knowledge, skills and abilities to other contexts		■	
Applying classroom management principles		■	
Course design evaluation		■	
Course management		■	
Data collection		■	
Analysis	■		
Evaluation	■		
Design	■		■
Technology	■		■
Develop	■		■
Video			■
Audio			■
Photography			■
Typography			■
Web & Interaction Design			■
Motion Graphics/Computer Animation			■
3D Modeling			■
Programming languages			■
Web development			■
Mobile development			■
AR/VR			■
Project management	■	■	■

Phase 2: Identify Human Performance System Gaps

We surveyed 295 members across FORCECOM to benchmark current competencies against the optimal state competency models. The sample population (N) was further refined to 238, removing any participants that skipped all the performance standard questions. Although there was a 13% progressive survey drop off, of the refined participants, the ratio of N-data remained statistically relevant. To capture any natural skill bridging or role/responsibility misalignment, a branching survey design was deployed rather than four independent surveys. This branching structure permitted members the flexibility to conduct a self-assessment of their skill proficiency levels as an instructor, ISD, and/or MMD. Within these roles, participants were further categorized by skill level as either an apprentice, journeyman, or master.

Each survey participant was asked five questions about every performance standard:

[2] Due to the difficulty of isolating IBSTPI's intellectual property from the USCG-originated performance competencies and standards, the USCG's institutional use agreement with IBSTPI requires the USCG to limit the external publishing of its developed competency models to the competency level.

1. Regardless of your current role, do you have experience with any of the following performance standards…?
2. How often do you perform the following performance standard…?
3. If you were to be assigned the following performance standards…, rate your ability to perform them.
4. If you can perform the following performance standards, with minimal to no coaching, where did you obtain the following skills and knowledge?
5. Select any external barriers that prevent you from achieving each performance standard.

Survey results quantified a gap for each performance standard within the three competency models, many of which would benefit from further professional development. Following the survey results, we conducted focus group interviews to validate gaps and identify root causes. The data from the focus groups were then used to analyze the efficiency of FORCECOM's Anatomy of Performance (Figure 1) and its overall impact on MRL.

Phase 3: Causal Analysis

The MRL Upskilling charter was influenced by elements of Gilbert's Behavior Engineering Model and Rummler's Human Performance System when selecting the following categories to isolate root causes from the individual performer's perspective: Skills and Knowledge, Resources, Performance Capacity, Information, Incentives and Motivation. The causal categories findings were then further organized into Rummler and Brache's Nine Boxes Model, to ensure gap analysis and subsequent recommendations are connected to the larger training ecosystem rather than isolated to the performer (or Human Performance System). The Nine Boxes Model contains three levels of performance: Organization, Process and Job levels; and three performance needs: goals, design, and management (Rummler, 2006).

- The Organizational Level deals with the organization as a whole; its strategy and its overall goals and measures.
- The Process Level is where the main work of the organization takes place.
- The Job Level is where individuals perform.

This diagnostic perspective was used to identify which area of the organization had opportunities to increase its contributing value towards the MRL goal.

FINDINGS

The Charter associated any causal findings from the Anatomy of Performance perspective to a systematic results chain. This results chain linked issues and associated gaps at the job, process, and organizational levels.

When calculating a percent gap in performance, FORCECOM leadership determined 85% as the optimal state compliance metric. Survey participants who did not answer the applicable questions were not included in the total sample population, therefore (N) was adjusted for each performance standard. This ensured survey drop off did not impact the statistics. Although the focus of the survey was not designed to evaluate competencies against a member's training and qualification record, one can assume the survey data is sufficient to be used as a summative evaluation of current training requirements, on-the-job training (OJT), advanced specialty resident training curriculum, and qualification process. As with any self-assessment survey, there were weaknesses and barriers to the data collection methods utilized.

The MRL upskilling results highlighted several performance improvement opportunities across FORCECOM. Figure 2 shows the performance gaps and their criticality scores, adjusted based on detailed analysis criteria. These scores were given to senior leaders to prioritize addressing the most critical gaps for target roles.

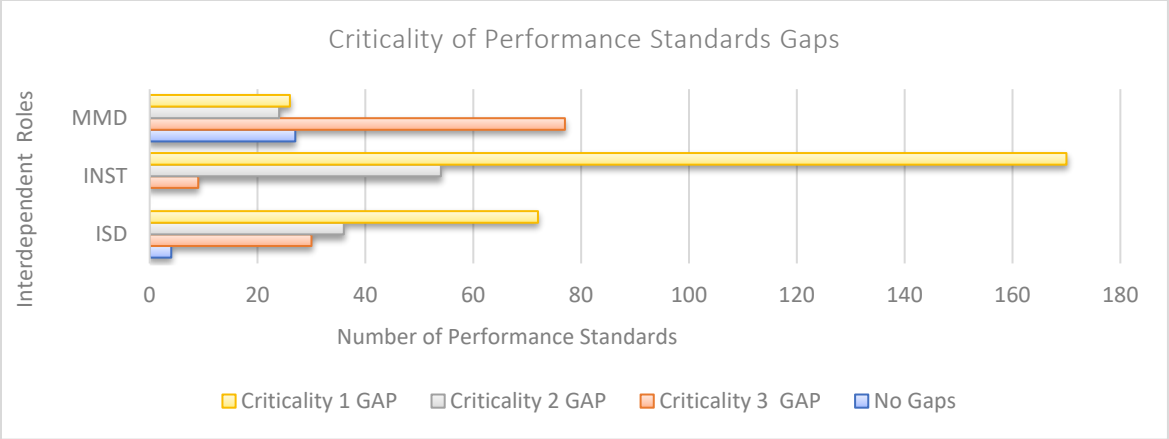

Figure 2 - Criticality of Performance Standards Gaps

The survey data provides a systematic view of associated processes that may be impacted by reported performance gaps. The analysis team took the average performance standard gap data and used it to identify the competency domains with the largest gaps, regardless of a position's expected proficiency level. Since the training ecosystem is a complex system with extensive subsystems, this data can be used by stakeholders to target processes that have the highest probability of impacting FORCECOM's value chain and desired outputs.[3]

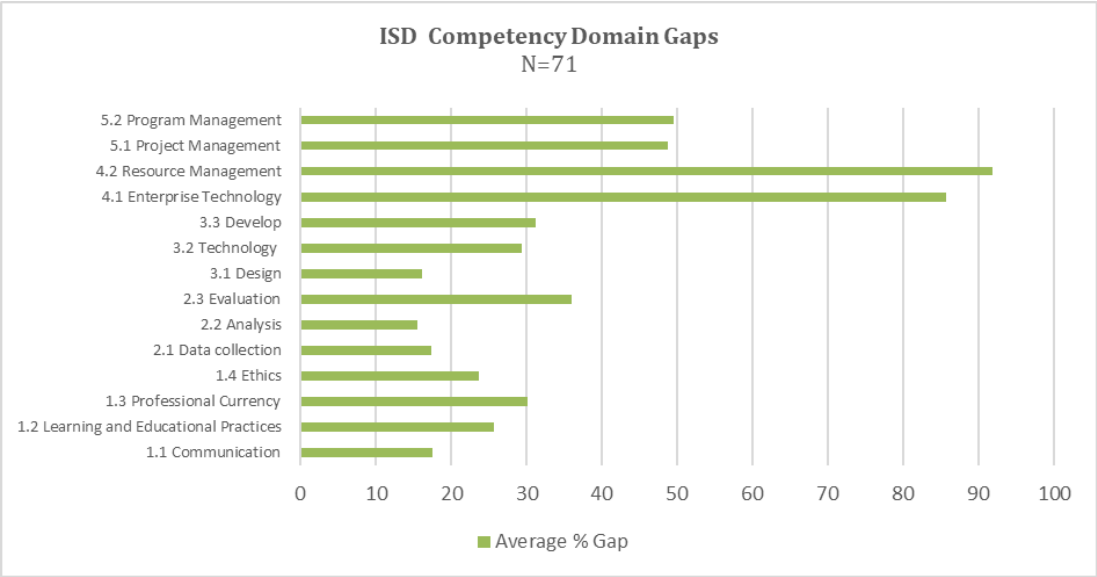

Figure 3 - ISD Competency Domain Gaps

[3] Since the purpose of the Domain Gap tables was to target process levels that impact the overarching system, the depicted average is of every participant regardless of primary role level or performance standard skill level (i.e., apprentice, journeyman, or master).

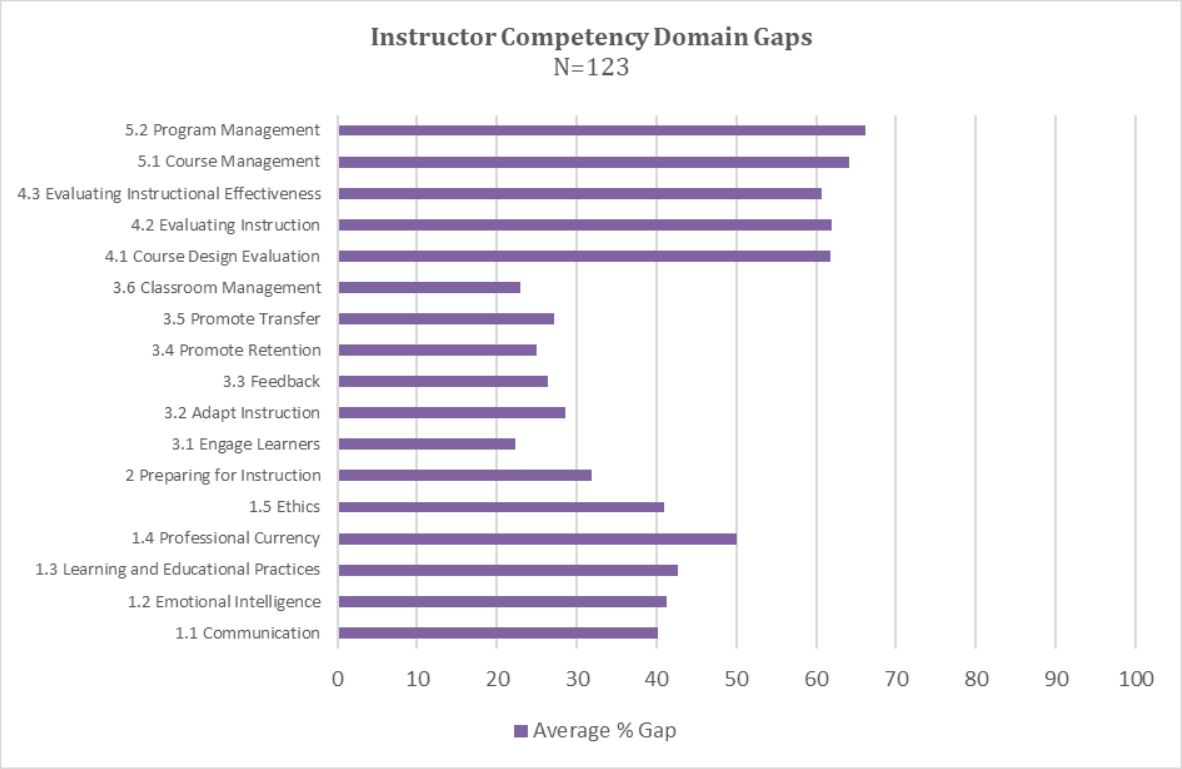

Figure 4 - Instructor Competency Domain Gaps

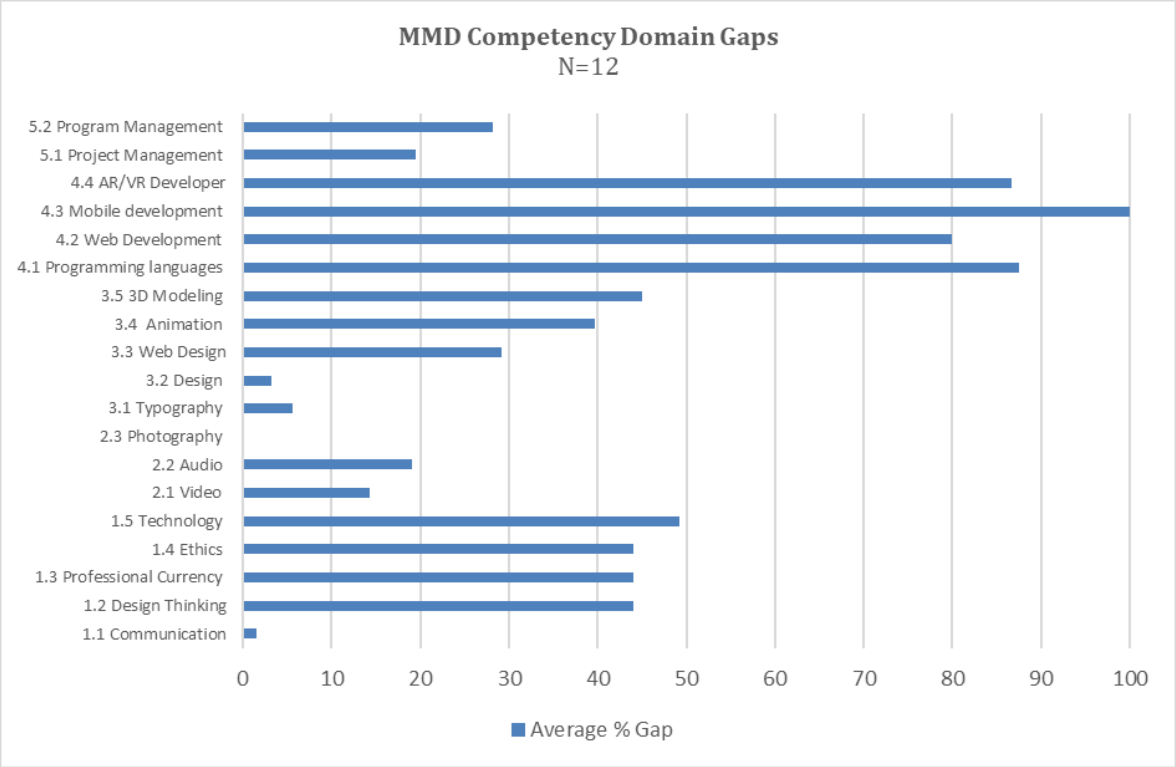

Figure 5 - MMD Competency Domain Gaps

Causal Analysis Findings Translated into the Nine Performance Variables

After identifying the performance gaps, the team conducted focus groups to determine the contributing causal factors. The common trends from these focus groups were organized into a framework (Table 2) for executive leaders, promoting a systematic approach to performance improvement and ensuring alignment in the nine-variable framework both horizontally and vertically for FORCECOM's continuous adaptation and survival in changing business conditions. It is important to note that the identified causal factors do not overshadow the achievements of the past four years in implementing MRL. Instead, this framework aims to enhance organizational impact by identifying opportunities to transform FORCECOM into an efficient, modern training ecosystem, rather than focusing solely on one performance level within a subsystem.

Table 2: Causal Analysis Findings Translated into the Nine Performance Variables

Performance Dimensions

Levels of Performance	GOALS	DESIGN	MANAGMENT
ORGANIZATION	Alignment	Ongoing Evolution (5 CF)	Early Initiation (3 CF)
PROCESS	Ongoing Evolution (7 CF)	Ongoing Evolution (8 CF)	Early Initiation (8 CF)
JOB	Ongoing Evolution (5 CF)	Ongoing Evolution ★ (8 CF)	Ongoing Evolution (9 CF)

★ *Skills and Knowledge Causal Factors*

TRAINING REQUIREMENT ANALYSIS

We conducted a Training Requirement Analysis (TRA) to assess whether the current USCG formal or informal training interventions address the performance standards identified in the optimal state competency models. The TRA was conducted on the ISD and Instructor roles only, as there is no USCG training/performance support for the Multimedia Developer role.

Instructional Systems Designer TRA

We evaluated the optimal ISD Competency Model Standards against the curriculum of the Course Developer Course (CDC). This training serves a broad audience, including Civilian ISDs, FORCECOM Officers, Curriculum Chiefs, and instructors. The analysis revealed that the CDC's broad target audience dilutes the effectiveness of skill transfer, as indicated by the upskilling survey. The CDC addresses only 48% of the performance standards, leading to gaps in formal training (Figure 6).

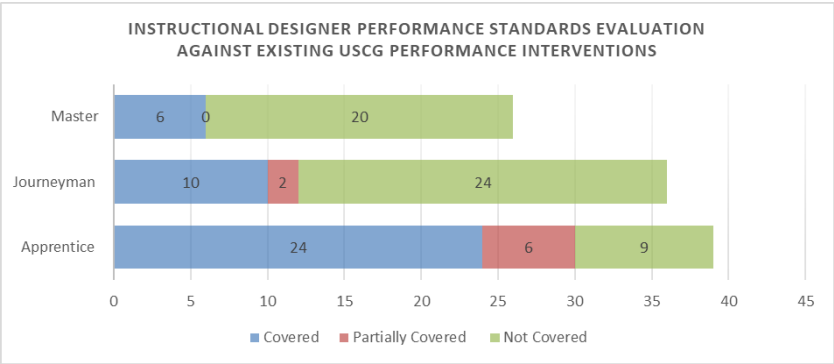

Figure 6 - ISD Performance Standards Evaluation Against Existing USCG Performance Interventions

Since a majority of ISDs are GS-1750s with diverse educational backgrounds and skills, it would benefit the USCG to address individual performance gaps through workshops and third-party training for continuing education in instructional design. The data suggests that USCG CDC course would enhance its value by re-evaluating its objectives and focusing on a smaller, more specific audience. To optimize resource allocation over time, a more conclusive cost benefit analysis should be conducted to reveal the specific cost benefit of using third party training for custom upskilling and supplemental training for the small community of instructional designers, while using internal courses for the larger population of learning professionals with a similar role and pre-requisite knowledge base.

Instructor TRA

We evaluated the optimal state Instructor Competency Model against the USCG curriculum, including the Instructor Developer Course (IDC), both resident and remote modalities, and the Remote Trainer Course (RTC). The gap in formal training was further assessed against the Instructor and Master Training Specialist qualification process within SOP Vol 13 to determine if the qualification process provided structured on-the-job training for the remaining performance standards.

As expected, IDC covers most of the performance standards listed under the apprentice proficiency level, with a steady decrease in coverage as the learner moves toward the master level (Figure 7). It's reasonable to expect that an apprentice instructor initiates their training journey by attending IDC, moving on to RTC (to build on intermediate level skills in facilitating online training), completes their instructor PQS, progresses towards the MTS qualification (working towards master level skills), is exposed to OJT, and potentially becomes a candidate for the revised Course Developer Course (to round out master level skills).

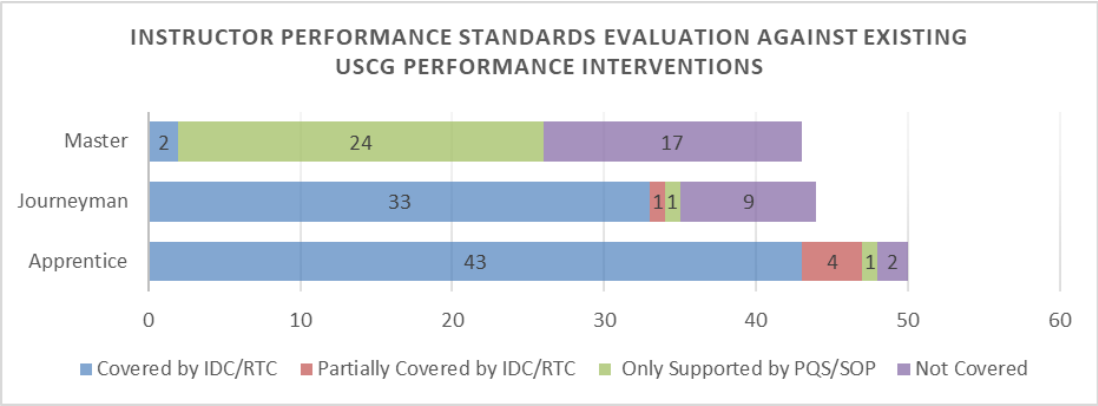

Figure 7 - Instructor Performance Standards Evaluation Against Existing USCG Performance Interventions

CONCLUSION

While many professions require licenses that necessitate periodic professional development or continuing education to stay current in their field, the roles of learning professionals in many organizations lack mandates for continued professional development to maintain job competencies. This gap presents a significant opportunity for organizations striving to upskill their staff and modernize their training products. By instituting regular, structured professional development programs, organizations can ensure their instructional designers, trainers, and other learning professionals stay at the forefront of educational methodologies and technologies. It is crucial to acknowledge that upskilling alone will not result in a modernized training ecosystem; addressing causal factors at the job, process, and organizational levels simultaneously is essential for systematic impact.

For organizations grappling with the challenge of modernizing their training products, a systematic approach to upskilling is crucial. Establishing clear competency models and aligning them with targeted training interventions, as demonstrated by the USCG's MRL Upskilling Charter, can bridge performance gaps and elevate the quality of training. Investing in third-party training, workshops, and continuous professional development ensures that staff can meet evolving industry standards and technological advancements. This strategic focus on upskilling will empower organizations to build a resilient, agile workforce capable of meeting current demands and anticipating future challenges.

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