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Information Warfare Force and Systems Readiness Assessment

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NPS NRP Executive Summary

Information Warfare Force and Systems Readiness Assessment

Period of Performance: 01/15/2021 – 01/14/2022

Report Date: 01/14/2022 | Project Number: NPS-21-N135-A

Naval Postgraduate School, Graduate School of Operational and Information Sciences (GSOIS)



NAVAL RESEARCH PROGRAM
NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

INFORMATION WARFARE FORCE AND SYSTEMS
READINESS ASSESSMENT
EXECUTIVE SUMMARY

Principal Investigator (PI): Dr. Randy William Maule, Graduate School of Operational and Information Sciences (GSOIS), Information Sciences

Additional Researcher(s): No additional researchers participated in this research project.

Student Participation: No students participated in this research project.

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Project Summary

The education, skills and experience required for information warfare (IW) warfighters have not been fully identified. Nor have training programs been evaluated for their capability to support IW force and systems readiness. This project evaluated Cryptologic Technician - Collection (CTR) and Cryptologic Technician - Technical (CTT) curricula and supporting directives to help structure a methodology for IW systems and warfighter readiness assessment. The research considered Ready, Relevant Learning (RRL) strategies for transition to point-of-need/just-in-time training (United States Fleet Forces Command, 2017), and Advanced Distributed Learning Total Learning Architecture (TLA) for next-generation curricula delivery (Advanced Distributed Learning, 2020). The curricula review advanced IW readiness recommendations to update subject areas and delivery capabilities.

Keywords: *training, Ready Relevant Learning, RRL, learning management systems, LMS, Total Learning Architecture, TLA*

Background

The Naval Science & Technology Strategic Plan “Warfighter Performance” objective addresses (a) training technologies to enhance fundamental information-processing abilities in young adults; (b) techniques to shorten training time, reduce training costs and maximize training impact; and (c) tools and techniques to achieve ubiquitous, engaging, scenario-based training (Office of Naval Research, 2011). In this project, we collected and examined CTR and CTT training curricula as part of the IW modernization initiative. Courses were decomposed into topics by knowledge, skill, and ability (KSA), then into KSA sub-areas by task. Content was reviewed for learning requirements, instructional design, evaluation, and task qualification. Next, the context was decomposed into topics and sub-areas to evaluate knowledge competencies and skill proficiencies.

Findings and Conclusions

CTR and CTT curricula was examined as part of the IW modernization initiative. Recommendations include content updates to address gaps, and new architecture to address Department of Defense (DoD) and Department of the Navy (DON) training and distance training objectives. Results were presented in decision matrices organized by CTR and CTT training competencies across KSA functional areas.

Recommendations for Further Research

Future research may implement the recommendations for training content and assessment updates, and recommended capabilities for more advanced curricula delivery.



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References

Advanced Distributed Learning. (2020, December 1). *Total Learning Architecture*.

<https://www.adlnet.gov/projects/tla/>

Office of Naval Research. (2011). *Naval S&T Strategic Plan*.

<https://apps.dtic.mil/dtic/tr/fulltext/u2/a552459.pdf>

United States Fleet Forces Command. (2017). *Vision and Guidance for Ready Relevant Learning*.

Washington: United States Fleet Forces Command.

Acronyms

DoD	Department of Defense
DON	Department of the Navy
CTR	Cryptologic Technician - Collection
CTT	Cryptologic Technician - Technical
IW	information warfare
LMS	learning management system
RRL	Ready Relevant Learning
TLA	Total Learning Architecture

