Evaluation of Graduate Education for Mid-Grade Officers:   
A Systems Engineering Approach

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# ABSTRACT

Advances in Systems Engineering (SE) contain many insights that are transferable into education systems. The interdisciplinary and formalized analyses found in SE can bring new efficiencies and improved indicia of verification to the process. This is not just an intellectual exercise. Many of the challenges faced by the United States military today will be better met by more effectively developing the next generation of senior officers. All of the services have a range of programs to address the education of mid-grade officers, the provision of which is made more difficult by virtue of operational exigencies, geographical dispersion, and burdensome external obligations. There are stated and unstated goals and objectives for officer education. The authors articulate and analyze those goals, assess their relevance and impact, and review current evaluation efforts and outcomes. The use of the V-Model to provide structure to the process in order to ensure optimal benefits is presented. There is an urgent need to implement pre-education bench-marking, progress monitoring and long-term assessments of impacts on performance, retention, advancement and leadership. The authors then discuss several emerging techniques and technologies to both identify and quantify the value added by graduate education, along with techniques for insuring productive analyses. The uses of computers to collect, analyze, and visualize the data are reported and evaluated. The creation of a series of Likert scale evaluations is reported, with examples of such instruments and ways in which they were developed, implemented and evaluated. Potential benefits from these analyses and potential losses from not implementing them are fully laid out. The authors set forth classic SE approaches and they adduce data to show the efficacy of such approaches. The authors assert that this more quantified methodology should better allow military educators and defense leaders to devise, assess and justify graduate education for mid-grade officers.

# ABOUT THE AUTHORS

**Daniel P. Burns** is the Associate Director for Learning Strategies and Assessment at the Institute for Creative Technologies at the University of Southern California and is a lifelong Systems Engineer. Previously, he was the Naval Chair and a Professor of Practice in the Department of Systems Engineering at the Naval Postgraduate School (NPS) in Monterey California. He retired as a Captain in the United States Navy and has served as the as the Military Associate Dean and as acting Dean of the Graduate School of Engineering and Applied Sciences at NPS. He has had a long and varied Naval career, including duty with the Central Intelligence Agency and four deployed ship tours, including duty in the Indian Ocean and the Persian Gulf. For eight years he directed research as a senior executive at SAIC. His research interests center on analyses of both human and resource utilization in defense efforts. Captain Burns received a BS degree from the U.S. Naval Academy and an MS from the Naval Postgraduate School. He is currently finishing his dissertation for a PhD from Southern Methodist University.

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