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Evaluating Navy's Funded Graduate Education Program

A Return-on-Investment Framework

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Summary

Background, Purpose, and Approach

The U.S. Navy and the other military services send a number of their officers to graduate-level institutions each year to obtain advanced degrees. The primary purpose of providing these officers graduate education is so they can fill positions in their services whose duties require the knowledge and skills gained in graduate school. Furthermore, the benefits of a graduate education extend beyond the specific assignment for which the officer was educated, applying to subsequent assignments as well, albeit less directly. However, at an estimated cost of about \$245,000 per officer for a funded master's degree, the cost of this education is substantial. For fully funded education, the service must pay not only the cost of the education but also the pay and allowances associated with an officer's billet allocated for education. Additionally, an opportunity cost is incurred: While the officer is attending school, his or her services are lost to the operational billets in which he or she could be gaining experience. The question frequently arises as to whether the benefit gained from a graduate education is worth the cost. While the quantitative effects of graduate education can be estimated, evaluating the qualitative effects of a graduate education poses a number of challenges.

The Navy asked NDRI to assess the quantitative and qualitative ROI for funded graduate education. The NDRI research team reviewed the educational policies of DoD and the Navy, compared the Navy's programs and metrics with those of the other services, and did

a detailed analysis of two officer communities within the Navy: surface warfare and meteorology and oceanography.

Findings

Key findings from the research include the following:

- **DoD educational policy suggests broader and more extensive use of graduate education than simply filling billets that have been determined to require it.** The new DoD policy speaks to educating military personnel for “future capabilities.” While the Navy’s most recent policy guidance on graduate education *governance* appears to accord with the DoD policy, it is not clear that this broader view has permeated the Navy’s educational community. The Navy’s system for managing graduate education and the metrics it uses to evaluate the performance of that system tend to focus on filling validated billets—that is, it manages to meet present needs, not to build future capabilities.
- **Graduate education provides both technical skills and non-technical competencies or “soft skills,” which are valued in a wide range of Navy billets beyond those that require graduate education.** The Navy realizes additional value through improved officer productivity, better decisionmaking, and increased retention. Additionally, in certain billets, competencies gained in graduate education may compensate for lack of domain knowledge.
- **Cross-service differences exist in graduate education philosophy; program parameters; utilization rates; and, particularly, program management.** The Navy has one of the largest requirements for graduate education in terms of annual quotas and validated billets. It has 550 annual quotas to fill some 4,800 billets, compared with the Air Force’s 460 quotas and the Marine Corps’ 180 quotas for far fewer billets each.¹ It also has the lowest uti-

¹ In Navy terminology, *quota* refers to an individual billet for a training or education course. Navy program managers control a discrete number of quotas for each program, which they

lization rates for officers with graduate education among all the services. The Navy's average career utilization rate for non-staff corps officers is about 50 percent, compared with the Air Force's nearly 60 percent within one tour following graduation and the Marine Corps' 96 percent. Moreover, even if the Navy achieved better utilization rates, there is still a mismatch between validated billets and graduate school quotas in the Navy.

- **Differences exist among Navy communities in the management of officers and billets that require graduate education, particularly between the restricted line and unrestricted line communities.** The restricted line has proportionally more billet requirements, more-frequent utilization, and more-frequent reutilization than the unrestricted line community. Cultural influences and career demands within the unrestricted line often impede demand for graduate school and service in validated billets.
- **Education execution, billet execution, and officer management execution are decentralized, and incentives and penalties for billet and quota management are not integrated.** Community managers and education program managers often have different goals and metrics for assessing program success. Community managers focus on operational issues and gauge their success by how well they fill all the billets in the fleet. Education managers focus on filling graduate school quotas with qualified officers and on placing officers with the proper educational credentials in validated billets. At times these goals clash, with the result being unfilled billets or billets filled by individuals who do not have the requisite experience or qualifications.
- **The overall benefits in terms of ROI to the Navy from graduate education can be measured, given certain assumptions.** Although assessing the qualitative effects of graduate education poses some challenges, it is possible to make some reasonable assumptions about the costs and benefits of a graduate education. Our approach presents a way to ascertain the costs and

can allocate to individuals. Typically, the individual's command will request a quota for a specific program, and the program manager will either approve or disapprove the request.

some assumptions to determine benefits. These parameters can be adjusted in the model to identify elements that are particularly sensitive. An order-of-magnitude estimate is quite feasible, and more precise assessment would be possible with better data.

- **The current metric, which specifies one utilization per career for each educated officer as specified in the DoD and Navy instructions, will not give the Navy a break-even ROI within a 20-year career, given our assumptions.**
- **Recouping the investment in graduate education expenses based on skills gained requires long service by officers in billets requiring the graduate education (multiple utilization tours) and even longer service in other billets.**

Recommendations

In light of our findings, we have divided our recommendations into three areas: policy, culture, and monitoring and evaluation.

Policy

To bring Navy educational practices more in line with DoD policy to shift graduate education toward development of future capabilities, the Navy needs to introduce a top-down approach to replace the bottom-up one it now employs. This shift would include reviewing existing graduate education instructions to verify that the language and intent square with current DoD policy. Navy policymakers should consider the intent of DoD policy (DoD Instruction 1322.10), revised in April 2008, that “Knowledge is good, and more is preferable.” Once this policy language is clear, Navy leaders need to communicate their graduate education policy to graduate education program managers, community managers, and officers.

Justifying the cost of graduate education requires extremely long service. However, the value of graduate education might be perceived to lie in the increasing productivity and decision quality that its soft skills and general knowledge provide. If so, the education may be considered a cost of doing business to achieve future capabilities. More-

over, if developing future capabilities is the program goal, it seems justifiable to make graduate education a competitive selection for those most likely to stay in the service and advance to flag rank. In essence, the Navy would be broadly educating many to achieve future capabilities and an ROI from the few.

Culture

Increasing emphasis on graduate education as a benefit to the community and to the Navy at large will require a cultural shift for some Navy communities to overcome negative perceptions about career “breaks” for education and utilization assignments. In line with a top-down approach, community leaders should set goals for graduate education attainment. One example might be “90 percent of all officers advancing at the O-5 board will have a graduate degree.” In tandem, community leaders need to develop goals for the types of graduate degree curricula that would support their anticipated capability requirements beyond their current validated billet requirements.

The Navy can take some tactical steps to improve their utilization efficiency immediately by increasing utilization rates and reutilizing officers with advanced degrees, thus increasing net quantitative ROIs. The Navy should provide incentives for more-integrated management of officer assignments at the community level and also institute penalties for poor management of billets, quotas, and officers.² These should vary by community to reflect differences in billet structures and operational requirements. Community leaders should also seek to provide incentives for completing graduate educations and serving in validated billets to increase economic returns on their education investments. The Navy should consider the approach the Air Force uses, which includes master’s degrees in promotion decisions. Additionally, because officers who serve in subsequent assignments that require graduate degrees increase the Navy’s net benefit in terms of ROI, promotion boards and

² One option for penalizing poor management would be a loss of graduate education quotas for communities that fail to meet certain threshold utilization rates for officers in validated billets.

other incentive initiatives should give exceptional weight to those who have both an advanced degree and practical experience in a given field.

Monitoring and Evaluation

The Navy should expand its utilization metric and enhance monitoring and evaluation of its graduate education program. The one-tour utilization metric needs to take into account additional benefits to the Navy that officers with graduate education offer. In particular, using these officers in billets not coded as requiring a graduate degree may offer value that graduate education program managers are not currently capturing. Better data collection and periodic evaluations of graduate education programs under a hierarchy of outcomes would assist in identifying this value.

Conclusion

The Navy possesses the necessary mix of institutions and curricula in its funded graduate education program to meet its present capability requirements. However, the metric of one utilization tour, as defined in current Navy policy, is not capturing the total value of graduate education to the Navy. In fact, given the current graduate school timing and career progression for most officers, one utilization tour per educated officer does not recoup the cost of educating that officer within a 20-year career. Our research and analysis indicate that the knowledge and skills gained through graduate education are valuable for both the officer and for the Navy. The value for the Navy lies in improved productivity, better decisionmaking, and increased retention. Some of this value can be monetized, and costs and benefits to the Navy can be estimated using enhanced data-collection methods and reasonable assumptions. Recent shifts in DoD policy language and intent suggest that the Navy should expand on the one-tour utilization metric to establish a more-nuanced assessment of the value of graduate education for the Navy's officer corps, especially with respect to future capabilities.