United States Navy

Development of the Enlisted Computer Adaptive Personality Scales

Situation

Currently, the Navy is in the midst of profound changes that are likely to result in different occupational and organizational structures in the future. The technological modernization that has begun in the Navy will only accelerate these changes. At the forefront of these major changes in Navy philosophy and activity, is the understanding that no amount of high-technology warfighting systems and platforms will replace the need for high-quality, highly motivated, and highly committed Sailors. The young men and women the Navy needs expect to be assigned to jobs that match their personal interests and competencies.

To begin a Navy enlisted career today, an applicant must take the Armed Forces Vocational Aptitude Battery (ASVAB), which covers four broad content domains. By combining scores across individual ASVAB tests, an applicant is qualified for service, assigned to a school, and enlisted into an entire Navy career. Unfortunately, the Navy's job classification and initial skills training processes are relatively inflexible. The Navy dictates to whom, when, by what means, and where training will be delivered to Sailors.

The Navy Roadmap Report (see references), envisions a Navy that will use a richer "whole person" profile to match people along a multitude of dimensions into the best-fitting Navy job available. Importantly, "best-fitting" will no longer mean the limited outcome of completing technical training, but will reflect all of the outcomes important to Sailors and the Navy, meaning that the applicant will: 1) likely perform well in both classroom and laboratory training 2) be proficient on the job, 3) be reliable, 4) work well in groups, 5) be satisfied with the job, 6) be promoted, and 7) be likely to reenlist. This new, complete assessment and initial assignment system will produce an optimal match between the person and available jobs, so the Navy will have the types of Sailors needed to assure efficiency and readiness in the 21st Century.

The development and validation of a non-cognitive predictor battery (ENCAPS) is an important first step in fulfilling that vision.

Approach

In the first phase of this project, a literature review was conducted, to delineate the most productive psychological, or non-cognitive, avenues to pursue. This resulted in the selection of three constructs for use in developing a first draft of what came to be called the ENCAPS measure. A description of this literature review and the process used to make decisions about which constructs to investigate, and which formats might be most useful, is reported in our *Following the Roadmap Report*, referenced below. The three constructs selected for development were Drive to Achieve, Social Orientation, and

Stress Tolerance, and the method of measurement selected was the computer adaptive testing method.

In the second phase of this work, items were written to tap the three chosen constructs and ratings were obtained about the extent to which each item represented the target trait. After considerable review and revision, items were entered into a program that, using an adaptive format, presents paired comparisons of same-construct items. In this manner, trait level score values can be computed in a very short amount of administration time with a very high degree of accuracy, capitalizing on test item analysis techniques known as IRT.

Results

ENCAPS was pilot tested using a sample composed of ROTC students from two universities, other college students from the same universities, and young adults who are not in college. Along with ENCAPS, several other traditional measures of personality were administered. The results of this pilot test demonstrate that ENCAPS does indeed measure the intended constructs, and has very satisfactory psychometric properties. These results are reported in a document referenced below. Next steps, then, will involve making decisions about other constructs that should be included in ENCAPS, writing items for those additional constructs, and conducting validation analyses of the full instrument.

References

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