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PRS Report No. 839
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DEVELOPMENT OF INSTRUMENTS AND SCORING PROCEDURES
FOR SELECTION OF ROTC DISTINGUISHED MILITARY GRADUATES
PS-4091-05

SUMMARY 10) Sally/Greenberg H.F./Brogden
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This report is concerned with a more specific phase of a general research program dealing with selection problems in ROTC. The specific problem is that of adapting instruments for the selection of cadets, who are distinguished military graduates from ROTC, for appointment to the Regular Army. The report describes a research study which was conducted for the purpose of developing scoring procedures for two instruments: a self-description blank to be used by ROTC cadets and an evaluation report to be used by the cadets' superiors.

14) AGO-PRS-839

ROTC cadets at six large universities were administered experimental forms of the two instruments. Item validity indices $\frac{H-L}{H+L}$ were computed for each item alternative on the ROTC Senior Self-Description Blank, ROS-1B (WD AGO PRT-709) and the ROTC Evaluation Report ROE-1B (WD AGO PRT-707), using scores on two criterion variables, and interim operating scoring keys were devised.

It is planned to cross-validate the scoring keys against follow-up data obtained with WD AGO Form 67-1, Officer Efficiency Reports. Data obtained from the operating program will be used for this purpose. Further revision of the keys constructed in this project will also be accomplished in the follow-up study.

BACKGROUND

D/P and A directed The Adjutant General to prepare interim instruments and procedures for selecting cadets from distinguished military graduates of senior ROTC courses for appointment to the Regular Army. At the same time, long-range and extensive research studies were to be undertaken in connection with this general problem.

- Authority is as follows: a) AGF Memorandum for Chief of Staff, File No. 326.6 (18 Apr 46) CNGCT-16, dated 18 April 47, subject: "Screening Tests for ROTC" b) DF from D/P and A to TAG, File WDGPA 326.6 ROTC (7 May 46), subject: "Screening Tests for ROTC" c) DF from D/P and A, WDGS to TAG, File WDGPA 210.1 (12 Nov 46), subject: "Selection Devices for Appointment of Selected Honor Graduates from Senior ROTC Courses" d) Program Plan for PR 4091, ROTC, dated 11 Feb 48.

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PURPOSE

The objectives of this study are: (1) to describe the two experimental instruments developed in connection with this study; namely, the ROTC Senior Self-Description Blank ROS-1 (WD AGO PRT-709) and the ROTC Evaluation Report ROE-1 (WD AGO PRT-707); (2) to carry out item analyses on these two instruments; and (3) to develop interim operating scoring keys for the two instruments.

POPULATIONS

The populations consisted of 300 second-year basic ROTC cadets at University of Alabama, Ohio State, Louisiana State, Cornell, University of Illinois, and the University of California. Cadets at these universities were tested and rated in the spring of 1947.

INSTRUMENTS

A. Predictor

1. The ROTC Senior Self-Description Blank ROS-1B (WD AGO PRT-709) contains 113 items, 63 of them intended to elicit information on the background of the person filling in the blank, 65 forced-choice pairs, and 30 pairs of descriptive statements coupled with three choices defining the degree of applicability of the preceding descriptive statements to the person filling in the blank. The item content of this instrument was taken with some adaptation from various biographical information blanks, principally the Integration BIB, Form E (WD AGO PRT-459). The answer sheet for ROS-1B is WD AGO PRT-710.

2. The Senior ROTC Evaluation Report, ROE-1B (WD AGO PRT-707) contains a general discussion on the principles of rating, instructions for accomplishing the rating form, and the test material necessary for ratings. The answer sheet for ROE-1B is WD AGO PRT-708. The content of ROE-1 consists of five sections, described as follows:

Section I. A section filled out by the adjutant, personnel officer, or other persons as specified by the commanding officer, containing such identification information as name, cadet grade, arm of service, physical fitness, date of birth, college or university, and period of report; and background information which includes college entrance examination scores, academic and ROTC grades, membership in college organizations, and previous military experience.

Section II consists of 25 brief descriptive phrases--both desirable and undesirable--which were used to describe Army officers. The cadet is compared with other cadets in his class on a five-point scale on each of the 25 characteristics.

Section III consists of 20 sets of forced-choice quartets; each quartet contains four words or phrases descriptive of the personal qualifications of the cadet. The rater is asked to decide which phrase of each set of four was most descriptive and which phrase was least descriptive of the cadet being rated.

Section IV is a rating section in which the rater is asked to make a series of 10-point over-all evaluations of the cadet in comparison with other cadets in his class. The cadet is rated on adjustment, cooperation, initiative, judgment, and common sense, bearing and manner, force, and over-all ability.

Section V. In this section, the rater is asked to write a brief description of the cadet being rated, his estimate as to the cadet's desirability for a Regular Army commission, a recommended duty assignment for the cadet, and the rater's signature.

Items for ROE-1 were selected and adapted for use from several previously developed instruments^{2/} so as to be made applicable for use with ROTC populations.

B. Criteria

1. The ROTC Cadet Evaluation Form, ROC-1, (WD AGO PRT-71) consists of a 20-point rating scale on which the cadets rank their fellow cadets in terms of feelings toward them as superior officers.

2. The ROTC Cadet Evaluation Form, ROC-2, (WD AGO PRT-716) is a rating scale which is identical to the ROC-1, with the exception that the cadets rank their fellow cadets in terms of their feelings toward them as subordinate officers under their command.

STATISTICAL ANALYSIS AND RESULTS

Average ratings for each rater were computed for both ROC-1 and ROC-2. The correlation between average ratings on these two criterion instruments was .91. In view of this high correlation, it was decided to use ROC-1 alone for obtaining item-validity indices.

Validity indices were computed for each item alternative of Sections II and III of ROE-1, using $\frac{H-L}{H+W+L}$ as the validity index. Validities were also computed for the eight over-all rating scales in Section IV. Validity indices $\frac{H-L}{H+W+L}$ were computed for all item alternatives of ROE-1.

- ^{2/}
- a. Officer Evaluation Report, OER, WD AGO PRT-462
 - b. Officer Efficiency Report, Form 67-1, WD AGO PRT-670
 - c. Officer Candidate Applicant Evaluation Report, OCAE-1, B, WD AGO PRT-572
 - d. Officer Efficiency Report, OER-1, B, WD AGO PRT-632

In developing an operating scoring key for ROE-1, items having validity indices greater than +10 were keyed positively, and those items with indices beyond -30 were keyed negatively. The 32 most valid item alternatives of Section II, the 121 most valid item alternatives of Section III, and the eight over-all rating scales of Section IV were combined with unit raw score weights, providing a composite operating scoring key for ROE-1.

It is of interest to note the results obtained when the item validity indices were compared with a predetermined scoring key for ROE-1. This predetermined key had been developed on the basis of item-alternative validities in the evaluation reports^{2/} from which ROE-1 items were selected and/or adapted. Agreement between this predetermined key and the operating item-analysis key was obtained in 77.6 percent of the keyed responses. In no case did the validity index obtained for the operating key disagree in sign with the manner of scoring that same item with the predetermined key.

In setting up the operating scoring key for ROS-1, the item validity indices of ROS-1 were compared with the indices of items in the Integration BIB, Form E. If the direction of the validity indices for any items was contradictory to the scoring of those items on the original BIB's from which the items were taken, those items were not included in the operating key.

In addition, two keys were developed for later experimental use.

The 60 item-alternatives yielding the highest positive validity indices were included in setting up a 'rights' scoring key, and the 46 item-alternatives having the highest negative indices were incorporated into a 'wrongs' scoring key.

CONCLUSIONS

Since the ROE-1 and ROS-1 scoring keys developed in this project could not be cross-validated before they were introduced for operating use, it is suggested that these operating keys be cross-validated against follow-up data on WD AG, Form 67-1, Officer Efficiency Report, ratings obtained from the operating selection program.

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^{2/} Ibid.