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DIFFERENTIAL PATTERNS OF ITEM ATTEMPTS ON THE
ARMY GENERAL CLASSIFICATION TEST EXHIBITED BY GRADE IV AND
V MEN TESTED AT THE RECEPTION CENTER, FORT LEAVENWORTH, KANSAS, 1944*

Introduction:

1. The possibility that men in the lower Army grades may vary markedly in the pattern of items attempted has occasioned considerable doubt as to the interpretation of low scores on the Army General Classification Test. At the present time men who score in grade V are presumed illiterates and men who score in Grade IV are presumed literates. However, the General Classification Test contains three types of items arranged in cycle omnibus form:

- a. Vocabulary
- b. Arithmetic
- c. Block counting

2. Vocabulary and arithmetic are generally conceded to be more closely related to literacy than is block counting. If there are differential patterns of item attempts, it is then possible that an appreciable number of men, otherwise illiterate, obtain grade IV on GCT by totally or partially ignoring vocabulary and arithmetic in favor of block-counting items.

3. To determine whether differential patterns of item attempts do occur among low grade men, two groups of men taking GCT at the Reception Center, Fort Leavenworth, Kansas, were selected for study:

- a. Men who were taking the test directly after induction
- b. Men who had completed the special training unit program

These two groups represent a method of differentiating men in the lower grades. Men are sent to Special Training Units because they are illiterate. Many of the training procedures in the Special Training Unit are likely to influence performance on the Army General Classification Test.

Problem:

- 1. To determine the degree of variation in patterns of items attempted on the AGCT by:
 - a. Men whose Qualification Test-1 score was 7 or above and whose AGCT score when processed at the Reception Center was Grade IV or V.

*For a study with similar results see: PRS Statistical Report No. 371, "Analysis of Attempts on Each Type of GCT Item by Grade V Men in Regular and Special Training".

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b. Men who were potential graduates from special training units and who took AGCT at the time of disposition. At this STU a man has to achieve Grade IV in order to graduate.

Population:

1. Of 1036 selectees processed at the Reception Center during the period of 4 April to 11 April 1944, 17 obtained Grade V and 270 obtained Grade IV.

2. Of 192 Special Training Unit men who were tested on 28 March, 4 April and 12 April 1944, 3 obtained Grade III, 121 obtained Grade IV, and 68 obtained Grade V.

Procedure:

1. Each test paper was analyzed to determine what proportion of the total number of items attempted were block-counting, what proportion were vocabulary, and what proportion were arithmetic items. Since there is an equal number of each of the three types of items uniformly distributed, the operation of only chance factors would be expected to result in a mean percentage of attempts of 33.3 for each type of item.

2. A preliminary inspection revealed that wherever there was a disproportionate concentration on a particular type of item, this type was block-counting. Therefore, the percent representing the block-counting proportion of total number of items attempted was computed for each paper.

3. Distributions of these percents were drawn up and means and sigmas computed for Reception Center Grade IV's, Grade V's, and STU Grade IV's, and Grade V's.

Results:

1. The four frequency distributions and their means and sigmas are presented in Figures 1 and 2. Figure 1 compares the Reception Center and STU Grade V's, while Figure 2 compares the Grade IV's. It is evident that the STU Grade IV and V men exhibit considerably greater concentration on block-counting items than comparable Reception Center men. The critical ratios of the difference in means are great enough to insure that the differences are not attributable to sampling errors (for grade V, $CR = 4.06$ and for grade IV, $CR = 13.57$).

2. The comparison of the Grade V distributions is especially significant in revealing the number of STU men whose block-counting attempts made up between 90 and 100% of all items attempted. On the other hand there were no Reception Center Grade V men whose block-counting attempts made up more than 40% of their total number of items attempted. Comparing the Grade IV groups on the basis of the number of men above 40% block-counting attempts, Figure 2 provides similar results viz. that the STU men are more likely to exhibit an excessive concentration on block-counting items, even to the extent of confining virtually all of their efforts to this type of item.

Discussion:

1. The results of this study appear to leave little doubt that AGCT grade IV and V men who had been trained in this special training unit tend to concentrate a disproportionate amount of their efforts upon the block-counting items, while this tendency is not particularly apparent in men of comparable Army grade who have not been to Special Training Units. It is possible that the training procedures in these units are such as to influence the pattern of item attempts. While this evidence of concentration upon block-counting items does not provide conclusive proof that a large proportion of STU grade IV's obtain their scores by this concentration, it certainly gives support to such a presumption. It is clear that a grade IV man who has concentrated 90 or more percent of his efforts in block-counting has attained grade IV through a block-counting score. However, an analysis of the relation of proportion of attempts on a type of item to the contribution of that type to the total score would be needed to provide conclusive evidence that a concentration of between 40 and 90% of effort is accompanied by a disproportionate contribution of that type of item to the total score.

2. Since this study reveals the likelihood that certain procedures in the STU at Leavenworth result in men concentrating on block-counting items in taking GCT, it suggests that the same may be true of other Special Training Units. However, only similar studies at other Special Training Units can provide a safe basis for generalization.

3. The fact that the present GCT is about to be replaced by the non-information tests of the Army Basic Abilities Tests diminishes the practical significance of the results of this study. The new battery will control the distribution of effort on various items and thus eliminate this type of possible error in the interpretation of the total score.

Conclusions:

1. Men from the Special Training Unit, Fort Leavenworth, Kansas exhibit a definite tendency to concentrate their effort on block-counting items in taking the Army General Classification Test.

2. Men of comparable Army grades who take the Army General Classification Test directly after induction do not exhibit this tendency to any appreciable degree.

3. The patterns of attempts exhibited by STU trainees may be attributed to training procedures in this unit, but this conclusion cannot be generalized to all Special Training Units solely on the evidence in this study.

4. The results of this study are suggestive, at least, of the conclusion that a considerable number of STU trainees who earn Grade IV do so primarily on the basis of a block-counting score.

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