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CAREFULNESS PEER RATINGS AS A
PREDICTOR OF SUCCESS IN
NAVAL AVIATION TRAINING

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SUMMARY PAGE

THE PROBLEM

Cadets were instructed to indicate whether each of the other members in their class was "more careful" or "less careful" than themselves. The Carefulness Ratings (CR) were correlated with scores on each of the primary selection tests and grades in the U.S. Naval School, Pre-Flight, and the addition of CR to the validity of the Pensacola Student Prediction System was investigated.

FINDINGS

Carefulness Ratings had significant relationships to the majority of the primary selection tests and Pre-Flight grades currently employed as predictors. For this reason, despite a significant relationship of CR to the criterion of success/failure, its unique contribution was too small to be of practical value.

INTRODUCTION

Since 1957 peer nominations obtained from naval aviation cadets during the eighth week of instruction in the U.S. Naval School, Pre-Flight, have been used in the Pensacola Student Prediction System. Shoenberger, Wherry, and Berkshire (4) found that peer ratings were the best predictor of success in flight training after the ninth week of training. Throughout the various stages of the training program, the peer rating variable continued to be a significant predictor of success.

Due to the initial encouraging results with peer ratings, further research has been performed to evaluate extensions and changes in the peer rating procedure. Doll (2) found that peer nominations obtained from officer personnel in naval aviation training were not predictive of success. He attributed this to the fact that officers observe their peers only in classroom circumstances whereas cadets are in close association on an "around-the-clock" basis. In a study concerned with peer rating validity as a function of rater intelligence, Doll (3) discovered that for the intelligence range of naval aviation cadets, there is little practical reason to take into account rater intelligence when concerned with the validity of the ratings given by individual raters.

Willingham (5) examined the predictive validity of a summation of peer nominations of several different traits. His approach was to define seventeen separate traits or personal descriptions and to instruct the raters to select the five men in their section who best fit each description. He found the trait "leadership" to be the best predictor of flight success and that prediction was not improved by using a summation of the five best items. This was attributed to a large halo factor and the inability of students to accurately differentiate traits.

The present study employs an approach slightly different from the one used by Willingham to relate peer nominations on specific traits to success in naval aviation training. In this study cadets rated their peers on only one general trait hypothesized to be related to success rather than on several specific personal descriptions as in the study performed by Willingham.

PROCEDURE

In 1958 and 1959, 613 cadets (AOC's, NavCad's, and MarCad's) in their eighth week of pre-flight were requested to indicate whether each of the other class members was "more careful" or "less careful" than themselves. The number of cadets in a class ranged from 12 to 32. The Carefulness Rating (CR) for each cadet was the number of "more careful" marks he received divided by the number of cadets in his class.

ANALYSIS

Three dichotomous criterion groups were established:

- a) Pass/Drop (composed of successful student aviators and voluntary withdrawals);
- b) Pass/Fail (composed of successful student aviators and flight and academic failures);
- c) Pass/Attrite (composed of successful student aviators and attritions for any reason other than medical).

Since each group contained slightly different subjects (no failures appeared in the Pass/Drop group), three separate but parallel analyses were performed on each criterion group.

Correlations between CR and each of the three dichotomous criteria were computed. Correlations between CR and each of the predictor variables were computed for each of the three criterion groups. The extent to which CR contributed to the predictive effectiveness of the Pensacola Student Prediction System was determined by the Wherry-Doolittle method. This

method selects those variables which in optimal combination yield the highest correlation with the criterion.

RESULTS AND DISCUSSION

From Table I it can be seen that CR correlated significantly at the .01 level with the Pass/Fail and Pass/Attrite criteria.

Table I
Correlations between Carefulness Ratings
and the Criterion Variables

	Pass/Drop (N = 417)	Pass/Fail (N = 462)	Pass/Attrite (N = 529)
Carefulness Rating	.016	.220*	.160*

* Significant at the .01 level (two-tailed)

Table II indicates that CR correlated significantly at the .01 level with most of the prediction variables for each of the three criterion groups.

The correlation of .51 between CR and Leadership Peer Rating for each of the three criterion groups is of special interest. This is consistent with Willingham's conclusions that a strong halo factor exists and that students are unable to differentiate traits.

For the Pass/Drop criterion all predictor variables except Leadership Peer Ratings, Engines, and CR were selected by the Wherry-Doolittle method with a resultant multiple correlation of .223.

For the Pass/Fail criterion all predictor variables were selected with a resultant multiple correlation of .388. CR was the last variable to be selected, raising the shrunken multiple correlation from .364 to .366.

Table II

Correlations between Carefulness Ratings and Other
Prediction Variable Scores for the Three Criterion Groups

	CR for Pass/Drop Group	CR for Pass/Fail Group	CR for Pass/Attrite Group
AQT	.160**	.168**	.162**
MCT	.161**	.147**	.161**
SAT	.088	.122**	.107*
BI	.063	.057	.047
Leadership Peer Ratings	.512**	.512**	.513**
Engines	.244**	.246**	.265**
Navigation	.300**	.303**	.316**
Physical Training	.180**	.171**	.178**

* Significant at .05 level (two-tailed)

** Significant at .01 level (two-tailed)

For the Pass/Attrite criterion all predictor variables except CR were selected with a resultant multiple correlation of .343.

CONCLUSIONS

Due to its high relationship to most of the other predictor variables, CR contributed significantly to prediction for only one of the three criterion groups (Pass/Fail). Even for the Pass/Fail criterion group its unique contribution was considered too small to be of practical value.

It is believed that CR represents merely a peer group evaluation based on a combination of the student's performance in Pre-Flight and general leadership qualities. The bases for CR are probably measured more reliably by other methods, i.e., Pre-Flight course grades and leadership peer ratings, both of which are currently being obtained.

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