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Some Factors in the Academic Superiority of Veteran Students

By WILLIAM A. OWENS AND WILLIAM A. OWENS, JR.

INTRODUCTION

Veterans of World War II in considerable numbers have now been back on college campuses for several years. Concern over their proper academic and vocational disposition has prompted a substantial number of studies of their differential characteristics as compared with non-veterans.

It has, for example, been rather well established through such investigations as those of Clark (1), Gowan (2), Taylor (5), et al, that veterans tend to be superior to non-veterans in academic achievement at the college level. Gowan has, in addition, pointed out that this state of affairs still obtains if scholastic aptitude be held constant. Owens (4), in a study of differential achievement by aptitude levels, has noted that veteran superiority appears to be more marked at the lower aptitude levels than at the upper; that is, that veterans less frequently fail when predicted upon an aptitude basis to do so.

Along a somewhat different line, Gowan found veterans significantly more certain of the wisdom of their divisional and curricular choices. Hamilton (3) observes that they need more refresher courses in mathematics and physics, but that their subsequent performance in these subjects is superior; and Gowan, again, cites evidence to the effect that veterans report an average of one hour of study per week more than non-veterans.

In considering such data as the above, the present authors found themselves wondering what *personal* factors might be related to the academic success of such an admittedly heterogeneous group as the veteran population. Following a preliminary appraisal of certain personal data it was decided to attempt to evaluate the relative contributions of age, and length of service, to academic achievement. It was further decided to relate the predictive efficiencies of these factors to that of academic aptitude for the comparative value which this last, well-known "yardstick" would have.

PRESENT INVESTIGATION

Problem — In accordance with the foregoing discussion, the purpose of this present study was to evaluate the relative contributions of age, length of service, and scholastic aptitude to the college achievement of a sample of student veterans.

The subjects were 194 (male) veterans enrolled in the Winona State Teachers College, Winona, Minnesota. Their ages were recorded in months, and their mean age was 23 years 3 months. Their periods of service were recorded in months, and their mean period of service was just over 31 months. Their college aptitude test scores were on the American Council on Education Psychological Examination, and their mean was exactly at the national norm. Their scholarship was recorded in terms of cumulative grade-point averages, and their mean G.P.A. was 1.22 (C+).

Method — All A.C.E. raw scores were transformed into modified standard scores to insure their comparability throughout the several editions of the examination represented in the data, and to establish them on a reasonably linear score scale comparable to the raw score scales and appropriate for statistical analysis.

The basic method employed was the familiar statistical method of multiple correlation, though this application was somewhat atypical in that greater importance was attached to the *independent* contributions of the several predictive variables than to the ultimate magnitude of their combined correlation with the criterion variable.

Results — Table I contains the primary results of the present study. In part A, it may be observed that the multiple correlation, $R_{4.123}$, is 0.10 points higher than the “zero-order” correlation of aptitude test score (A.T.S.) with grade-point average (G.P.A.). Especially noteworthy in part B are: 1. The similar magnitudes of the independent contributions of age and aptitude test to the prediction of grade-point average; 2. The *negative* independent contribution of length of service; and 3. the high probabilities, P, of statistical significance associated with each beta value.

TABLE I
RELATIONSHIPS OF AGE, LENGTH OF SERVICE, AND APTITUDE
TEST SCORE TO GRADE-POINT AVERAGE
A. Intercorrelations of the Primary Variables and Multiple
Regression

	(1)	(2)	(3)	(4)
	Age	L. of S.	A.T.S.	G.P.A.
(1)		0.39	0.16	0.37
(2)			-0.04	-0.02
(3)	$\left. \begin{array}{l} \text{\% } 5 \text{ } r = 0.14 \\ \text{\% } 1 \text{ } r = 0.18 \end{array} \right\}$			0.47
(4)				

$$Y_4 = .0786 X_1 - .0100 X_2 + .6813 X_3 - .6371$$

$$R_{4.123} = 0.57$$

B. "Betas" in the Multiple Regression, and Their
Significance.

		<i>Beta</i>	<i>t</i>	<i>P</i>
Age	(1)	0.36	5.54	< 1%
L. of S.	(2)	-0.15	2.24	< 5%
A. T. S.	(3)	0.41	6.72	< 1%

Interpretation — Two aspects of these results seem to demand an attempt at interpretation. The first is the matter of the relatively substantial relationship between age and grade-point average. Here three, *not* mutually exclusive, hypotheses suggest themselves. 1. It is conceivable that the older subjects, who by and large spent longer periods in service, (Age & L. of S., $r = 0.39$) could have more completely acquired some knowledge, habits, or attitudes which had positive transfer value upon their return to the academic scene. That this hypothesis is at variance with the data can be seen in the fact that the independent contribution of length of service to the prediction of grade-point-average is *negative*. 2. The older subjects may have been, for numerous reasons, more serious about their work and better motivated. This view would have to support it the considered opinions of many careful observers who interview veterans and the implications of previous studies. 3. There apparently *was* a tendency for only the more capable older subjects to return to college after the war (Age & A.T.S., $r = 0.16$). Such a consequence could have resulted from a growing awareness on the part of the less capable as to their poor academic prognosis, from a fuller appreciation on the part of the more capable as to the benefits of higher education, from pre-training differences in financial status, reflecting differences in capability, or from similar selective influences.

The second aspect of the results which needs interpretation has been previously mentioned; it is the matter of the *negative* relationship between length of service and grade-point average. In this instance, also, at least three possible hypotheses may be offered. 1. Absence from school may have represented a period of disuse during which certain specific skills became impaired. 2. Military service may have involved considerable learning, much of it under pressure of time, which retroacted upon earlier academic training. 3. The military situation may have caused, as frequently suggested, some shifts in habits and attitudes which were maladjustive insofar as the return to academic life was concerned. Again, these three hypotheses are not mutually exclusive and each may constitute a partial explanation.

CONCLUSIONS

- (1) Age was very nearly as good a predictor of the scholastic success of this veteran population as was college aptitude test score.
- (2) The relationship between length of service and grade-point average was low but negative.
- (3) The correlation between aptitude test score and grade-point average was increased from 0.47 to 0.57 by including estimates of the contributions of age and length of service to this relationship.

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AND

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