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Thomas E. Hannum
Iowa State University

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Correlates of Achievement in a Veterinary Medicine Curriculum

THOMAS E. HANNUM¹

Abstract. A correlational study was made of test scores and achievement of Veterinary Medicine students who graduated in the spring of 1959 from Iowa State University. Cumulative grade point averages were obtained at the time of graduation and correlated with selection data obtained at the time of admission to the College of Veterinary Medicine in the fall of 1955. These data included: pre-veterinary grade point averages; interest scores on the Strong Vocational Interest Blank; Veterinary Aptitude Test scores; American Council on Educational Psychological Examination (College Edition), Quantitative and Linguistic scores; and numerical ratings made by a faculty committee during screening interviews with the candidates for admission. Pre-veterinary grade point average and interview rating contributed the only statistically significant correlations with achievement.

Several devices have been employed to assist in the selection of students to be admitted to the College of Veterinary Medicine at Iowa State University. In the past the faculty selection committee has had available the candidates' scores on the American Council on Education Psychological Examination, college edition (ACE), his grade point average (GPA) in pre-veterinary course work, and a numerical rating from an interview conducted by the selection committee members. Later, Owens (1950) developed a Veterinary Medicine Aptitude Test and Hannum (1950) developed a veterinarian scale for the Strong Vocational Interest Blank for Men.

Other research has attempted to combine some of these variables by statistical procedures in order to improve on their predictive efficiency. Hannum and Thrall (1955) worked out an equation employing the ACE scores, Strong scores, and pre-veterinary GPA in various combinations. This study indicated that an equation employing all three of these variables was the most effective combination.

Any study of this group encounters difficulty in obtaining a suitable group to use for comparison, since those not selected do not, of course, enter the curriculum, and those who are admitted are so highly selected that very little attrition occurs.

The present study was begun in the summer of 1955 during the selection of students to be admitted to the Veterinary College in the fall of 1955. At that time it was anticipated that screening data would be obtained on all applicants using all the selection devices

¹Department of Psychology, Iowa State University, Ames, Iowa.

mentioned above. Unfortunately, variations in the time and place of screening, insufficient coordination with testing and screening personnel, and a subsequent loss of students for the four year follow-up study resulted in the final study being handled differently and with fewer cases than was originally intended.

The present study, therefore, was for the purpose of determining the interrelationship between the various selection devices and the cumulative GPA of these same students at the time of graduation.

PROCEDURE

Scores on the various selection devices were obtained at the time of selection of the students to be admitted to the College of Veterinary Medicine in the fall of 1955. These scores included the following:

1. The scores on the Veterinary Interest Scale of the Strong Vocational Interest Blank for Men.
2. The Quantitative score from the American Council on Education Psychological Examination.
3. The Linguistic score from the above named examination.
4. The score on the Veterinary Aptitude Test.
5. The rating from the Faculty Screening Interview.
6. The pre-veterinary Grade Point Average.

In addition to these data, the cumulative Grade Point Averages of these students at the time of graduation in the spring of 1959 were also obtained. Difficulties mentioned previously resulted in only 46 cases in which complete data were available.

All of the variables mentioned above were intercorrelated.

There were so few failures or drop-outs that a prediction of attrition was impossible.

RESULTS AND DISCUSSION

As can be seen in Table 1, the only statistically significant correlations found between scores on selection devices and cumulative GPA were those of .63 with pre-veterinary GPA, and .50 with Interview rating. A multiple correlation, correlating both the pre-veterinary GPA and the Interview ratings with cumulative GPA, was not significantly higher than the correlation between cumulative GPA and pre-veterinary GPA alone. The only significant intercorrelations among the scores on the selection devices were those between pre-veterinary GPA and Interview ratings, between Veterinary Aptitude scores and ACE Q scores, and between the Q and L ACE scores.

Table 1
Intercorrelations of the Selection Scores and Cumulative GPA

	Pre- veterinary GPA	Interview Rating	Veterinary Aptitude	ACE Q	ACE L	Cumulative GPA
Strong Veterinary Interest	.06	.02	-.03	-.01	.09	.09
Pre-veterinary GPA		.52*	.27	.24	.12	.63*
Interview Rating			.18	.08	.17	.50*
Veterinary Aptitude				.45*	.26	.19
ACE Q					.47*	.10
ACE L						-.08

*Statistically significant beyond the 5% level.

The low correlation between Interest scores and cumulative GPA of .09 agrees with that of .06 reported by Hannum and Thrall (1955) but disagrees with that of .30 reported by Layton (1952). The latter correlation, however, was between Interest scores and GPA for the first year of veterinary medicine at the University of Minnesota.

The low correlations between ACE Q scores and cumulative GPA and between ACE L scores and cumulative GPA of .10 and -.08, respectively, is similar to the correlation of .02 between ACE total scores and first year veterinary GPA reported by Owens (1950). However, Hannum and Thrall (1955) reported a correlation of .32 between ACE total scores and four year cumulative GPA in veterinary medicine.

The correlation of only .19 between Veterinary Aptitude scores and cumulative GPA differs considerably from the tetrachoric correlations reported by Owens (1950). These correlations ranged from .48 to .72 and were based on groups from several different veterinary colleges. The latter correlations were with the first year GPA only.

The low predictive values of the Interest scores, Veterinary Aptitude scores, and ACE scores is probably due, in part at least, to the fact that students with a minimal amount of interest and aptitude do not enroll in veterinary medicine, and thus veterinary medicine students are quite homogeneous. This study serves to confirm again that there is no general relationship between scholastic achievement and Interest and Aptitude scores in an already selected group.

It seems apparent from the examination of these correlations that the Interview rating was heavily weighted by those in charge of selection. Also, it seems apparent that the interviewers were influenced by the candidate's pre-veterinary GPA. Faculty members in charge of selection report that the pre-veterinary GPA does carry a lot of weight in their ratings.

This study also serves to confirm again that long established habits of work are more influential in achievement than any other single factor. The highest correlation with achievement in veterinary medicine is previous academic achievement.

It is not meant to be suggested, however, that some of the selection devices employed in this study are of no value. Certainly in the guidance and selection of individuals from a more heterogeneous population of students these interest and aptitude factors might be useful. However, once students have been selected for training in veterinary medicine at Iowa State University, previous achievement is the best predictor of achievement in veterinary training.

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