

CHARACTERISTICS OF HONOR GRADUATES

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by

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PREVIEW

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## CHAPTER I

### INTRODUCTION

The purpose of this study was twofold:

(1) To identify characteristics which can be used as predictors of "Honor Graduate" status for students enrolled at the University of Nebraska; and

(2) To determine the relationship between age of graduation from high school of honor graduates of the University of Nebraska and such attributes as personal and occupational history, parental socio-economic status, and size of home community.

A review of the literature related to the study of superior or gifted students reveals that many different research designs have been followed in the accumulation of knowledge about such individuals. In some studies, young children of high intelligence have been identified and observed at intervals, over a period of years. In other studies, groups of superior students at various age levels have been observed simultaneously. In still other studies, the research design has been that of contrasting superior and average students within the same grade level to identify differential characteristics between the two groups. Each of these research designs has unique advantages over the others but the varied approaches toward gaining an understanding of superior students have often led to conflicting findings and have left many questions relating to specific groups of

superior students unanswered. As illustrations of these two points Terman (73) reported that gifted children tend to come from higher socio-economic levels, whereas Eckert (17, p. 71) found that "...superior achievement is not accounted for by superior socio-economic level." Although several studies have been conducted regarding superior high school students, little attention has been directed to superior college students.

The present study was prompted by the relative absence of studies relating to superior college students, by the conflicting findings of previous researches, and by the desire of the investigator to assess the extent to which conclusions based on studies of other superior students would also be true of University of Nebraska honor graduates. An attempt was made to design the present study so as to incorporate as many of the unique advantages of the previously-mentioned research designs as possible. Thus, for some phases of the study, characteristics of honor graduates were contrasted with those of a random sample from their graduating class. For other phases of the study, only descriptive techniques of the group of honor graduates studied were used. For additional phases, the predictive effectiveness of characteristics available at the time of entrance into the university were explored. Most of the hypotheses to be tested in this study, however, evolved from conclusions of previous studies.

Terman (73) studied gifted subjects from childhood to adulthood and found that they were characteristically younger than their classmates in elementary and high school and in college. Moore (48), in a study relative to the age of graduation from high school of Columbia University students,

found that the superior students graduated from high school at an earlier age than other students. Results of such studies as the foregoing led to the attempt to determine the relationship between age of graduation from high school of the University of Nebraska honor graduates and of a random sampling of other students from the classes of which the honor graduates were a part. On the basis of previous research, it was hypothesized that the honor graduates would be younger than their classmates.

Pearson (54), in a study conducted at Northwestern University, found that the most successful college students had ranked in the upper quarter of their high school graduating class. Students involved in Pearson's study had graduated from high schools which are relatively larger than the majority of high schools in Nebraska. It was felt desirable to investigate the relationship of the quarter of high school graduating class to honor graduate status at the University of Nebraska to assess the extent to which Pearson's findings would also be true of the University of Nebraska. It was hypothesized that there would be a positive relationship between rank in high school graduating class and honor graduate status.

Among the available scholastic aptitude tests, the American Council on Education Psychological Examination is used extensively as a preregistration test at colleges and universities in the United States. This examination has been a part of the preregistration test battery at the University of Nebraska for many years. In a study by Wallace (79, p. 42) conducted in 1949 entitled "The Predictive Value of the ACE

Psychological Examination, "Wallace concluded that "assurance is slight that an individual obtaining a low score on the ACE cannot engage in an university curriculum, particularly if other indicators such as high school grades are in his favor. " In contrast to the findings of Wallace, Averill (4) concluded that the American Council on Education Psychological Examination was an effective predictor of academic success at Worcester Teachers College.

Studies by Littrell (45), Mueller (50), Edmison (18), and Mortvedt (49), at the University of Nebraska, have shown the American Council on Education Psychological Examination Linguistic subscore to be of some value as a predictor of academic success but the Quantitative subscore to be of considerably lesser value. The American Council on Education Linguistic subscore was, therefore, selected as a variable to be investigated in relation to honor graduate status in this study. An Additional refinement over previous studies was incorporated by classifying the honor graduates into their respective colleges so as to make an evaluation of the American Council on Education Psychological Examination Linguistic subscore as an indicator of honor graduate status within each college. It was hypothesized that there would be a positive relationship between the Linguistic scores and honor graduate status within each college.

In the articles appearing in the literature relating to the superior student, controversial points of view have been expressed about the desirability of accelerating the

superior student. Some authors have advocated acceleration whereas others have been adverse to acceleration. Flesher, Pressey, Terman, and Worcester are among those advocating acceleration. The results of a study involving 104 women accelerates and a parallel group of non-accelerates conducted in 1949 at the Ohio State University by Flesher and Pressey (21) showed that the accelerates were superior with respect to further schooling, further graduate education, percentage married, and participation in activities. Terman (72), in his study entitled "American Scientists", found that "those who graduate early are most likely to know where they are headed vocationally." Worcester (83, p. 49), in his pamphlet The Education of Children of Above Average Mentality, advocates acceleration as an important factor in utilizing valuable human resources early to "...save them for themselves and for society."

In opposition to the foregoing points of view, Jones (37) emphasized the difficulty which accelerates have in securing employment. Cowdry (14) pointed out that youthfulness at the time of graduation is a cause for constant change in occupation. Jones (37) also discussed the waste of energy brought about by overstimulation as a result of acceleration.

These contradictory arguments regarding acceleration emphasized the desirability of investigating the occupational history and personal history of University of Nebraska honor graduates with respect to age. It was felt that such

evidence might assist in resolving the acceleration controversy. In general, it was hypothesized that the accelerate (younger honor graduate) would encounter no more occupational change nor difficulty in securing employment than other honor graduates.

As has been shown with respect to other characteristics of superior students, there are also conflicting findings reported in the literature regarding the socio-economic status of the parental home of the superior student and the size of his home community. The contradictory statements of Terman (73) and Eckert (17) on this point were referred to earlier. Mulligan (57, p. 195), at the University of Indiana, stated that:

Excluding farmers from the Edwards Socio-economic Groups, a direct ratio was found between socio-economic groups and indices of representation at the Indiana University. The white collar group was over represented, while the semi-skilled and farmer groups were under represented for college enrollment in general.

Such statements as that by Mulligan, and those made by Terman and Eckert, led to the inclusion, as part of the present study, of a descriptive analysis involving the educational and occupational background of parents of honor graduates, and the size of the home community, in relation to age of graduation from high school.

#### A. Need for the Study

The present study should have implications for the education of gifted children, for counseling and for genetic psychology. From the analysis of data regarding age of

graduation of honor graduates, some insight into the desirability of acceleration should be gained. From the evaluation of predictive indices, superior students should be identifiable earlier in their academic careers. And from the descriptions of their socio-economic background and community size should come greater understanding of the potential honor graduates.

Whereas the superior students observed in other studies have been identified on the basis of intelligence quotients or age in class as compared to average age, the honor graduates in the present study were chosen because of their high achievement. In general, honor students at the University of Nebraska are defined as those students, 1) whose cumulative grade-point average at graduation places them in the upper three percent of their graduating class; and 2) who are graduated with distinction or high distinction. When it is recognized that the proportion of college graduates in the general population in the United States is relatively small, the severity of the criterion "honor graduate status" is apparent. It is felt that honor students at the University of Nebraska are definitely "gifted" individuals and have demonstrated their effectiveness through obtaining high marks over a four-year period. Thus, a study involving such persons should provide some understanding of superior college achievers--a group about whom relatively little has heretofore been known.

#### B. Background of Theory and Research

Much of the theory and research for the purposes of this



study has been taken from the results of the studies of Terman, Hollingworth and Pressey, who have made outstanding contributions to the existing knowledge of the "gifted".

Terman and Oden (73) of Stanford University, in their follow-up study of nearly 1500 gifted individuals, found that only 6.8 percent of the men and two percent of the women in this group graduated from high school above the age of 18 years and 6 months. Forty-five percent entered professions, seventy-one percent entered professional and semi-professional occupations, and less than one percent were unemployed. In college, 17.2 percent of the men and 19.4 percent of the women were elected to Phi Beta Kappa, and 15 percent of the men and 4.5 percent of the women were elected to Sigma Xi.

Education after graduation from college showed that the following degrees were obtained in descending order: law, masters, doctorate, and Doctor of Medicine. Sixty-eight percent of the men and sixty percent of the women enrolled for graduate work after getting their baccalaureate. Sixty-two percent of the men and eighty-two percent of the women were married, with a greater number marrying after the age of 30 years than before 30 years. The average number of children for the entire group was 1.5 in a period of five or more years after marriage.

The gifted men tended to marry college graduates rather than women with less education. Gifted women tended to marry men with college degrees more than fifty times out of one hundred.



A tendency toward superiority in social background was evidenced by the fact that 81.4 percent of the gifted came from professional or semi-professional and business groups, and the average education of the parents of these subjects was four to five grades higher than that of the average person.

Among the gifted who went to college, 36 percent of the men and 16 percent of the women earned more than half of their expenses, but 23 percent of the men and 44 percent of the women did not earn any part of their expenses.

In an article written by Terman in 1954, "Discovery and Encouragement of Exceptional Talent" (71), he reported that of the nearly 1500 subjects with an intelligence quotient of 140 or higher in the study, thirty percent received honors while in college, twenty-nine percent graduated from high school at 16 1/2 years of age and seventy-one percent graduated between 16 1/2 years and 18 1/2 years of age.

Forty-seven members of the group had been listed in the American Men of Science, ten to thirty times as large a proportion as would be found for men in general.

Terman's studies have been basically descriptive, whereas Pressey (54, 55, 56, 57) has conducted several studies testing hypotheses about the "acceleration" of the gifted, a concept that Hollingworth (32) emphasized in her studies of gifted children. Hollingworth (32, p. 17) expresses her point of view in the following statement:

There are nevertheless weighty reasons why rapid progress through school by some means is very advantageous for psychological, physical, and economic adjustments in late adolescence.

In 1944, Pressey (57, p. 59) wrote an article entitled "A Neglected Crucial Psycho-educational Problem," in which he studied young students at Harvard and stated that

...younger students best take to college work and college life; a greater number graduate and a greater percent are better adjusted socially.... delays caused by advanced schooling in beginning life work and reaching economic independence and marriage appear often to hamper the development of health, emotional life, and to be a factor in the failure of the graduate population to reproduce itself...

A study by Ziegel (84) of 200 high school students at the University of Missouri compared with a control group, revealed that the honor students were younger than the control group, and were participating in more extracurricular activities than their contemporaries. There was no difference regarding incidence of marriage and type of occupation between the two groups.

In one of the relatively few studies based on superior college students, Remmers (63) compared 531 distinguished students with 300 non-distinguished students at Purdue University in 1931. He found that the distinguished students had a younger modal age at entrance and that they came from large long-term city schools, and had fathers who were engaged in professional occupations. He also found that the superior student was better represented in all activities except in athletics and showed a preference for agriculture, chemical engineering and science in his choice of colleges.

By comparing two groups of students selected on the basis of grade-point average, those in the upper quarter and those in the lower quarter, Eckert (17, p. 72) found in 1935 that "...ACE scores are not a very reliable means of differentiating superior ability." She also found that:

Academic superiority cannot be attributed to a very favorable socio-economic situation, and that the inferior student has greater interests in social activities than the superior student.

Boucher (7, p. 67), studying freshman admissions at the University of Chicago, found:

A significant correlation between a student's percentile rank on the ACE psychological examination and average college marks, ...and a significant correlation between general average high school marks and general average college marks.

Rank in graduating class was more significant as a predictor of college marks than the average of the high school marks.

Age and occupation of father were significantly correlated with success in college.

The theory and research quoted above has been based on the study of the gifted using varying criteria for the selection of the subjects. It is the purpose of this study to relate the variables; age of graduation from high school, high school grades, American Council on Education Psychological Examination Linguistic scores, value of acceleration in regard to personal and occupational history, and background, to the population of honor graduates of the University of Nebraska.

## CHAPTER II

## REVIEW OF LITERATURE

The characteristics of the honor graduates analyzed in this study involved different aspects of personal data and experiences and were classified into two major categories:

1. Characteristics that might be used as indicators of scholastic success, and
2. Typical characteristics with regard to occupational and personal history, socio-economic and educational background of parents, and the size of home community. These characteristics were also analyzed in relation to different age groups.

The first major category of characteristics was divided into three main classes: age of graduation from high school, high school standing, and American Council on Education Psychological Examination Linguistic (L) scores. The second major category of characteristics was also divided into three main classes: personal history, occupational history, and background in relation to age of graduation from high school.

The three main classes in the second major category were in turn subdivided into different sub-classes which were studied in relation to age of graduation from high school. Occupational history was divided into: 1) present occupation, 2) change of occupation, and 3) difficulty in securing positions. Personal history was divided into:

1) marital status, 2) occupation of spouse, 3) education of spouse, 4) fertility, 5) expenses earned while at college, 6) activities before and after graduation, and 7) and 8) honors before and after graduation. Each of the foregoing sub-classes and the different categories into which they were divided will be given consideration in the review of literature. It was found that some studies involved many of the characteristics included in the present investigation whereas others involved only one or two. It was, therefore, not possible to make strict classifications of the different results of the studies reported so as to fit exactly the classification of characteristics developed for purposes of this study.

Results of studies by Terman, Pressey, and Moore include many characteristics and, in reporting these studies, it was considered desirable to report the pertinent results according to author. Results of other studies reported in this chapter, i.e., research by Hilts, Wagner, Flesher, West, Thornberg, and Remmers, involve the areas of age of graduation from high school, high school achievement, marital status, activities and honors. These studies are reviewed in the same way as those of Terman, Pressey, and Moore.

In general, the review of literature has been divided into two main sections:

- I. Indicators of scholastic success and
- II. Typical characteristics of the gifted.

The section concerned with indicators of scholastic success has been divided into: A. Age in relation to scholastic achievement, B. The predictive value of high school marks, and C. American Council on Education Psychological Examination Linguistic scores and their value in predicting college performance. The section concerned with typical characteristics of the gifted has been divided into: A. Occupational and personal history of the gifted, and B. Background information.

### I. Indicators of Scholastic Success

#### A. Age in Relation to Scholastic Achievement

The review of literature in this section is concerned with age of graduation from high school, age of entrance into college, and age of graduation from college in relation to achievement. Pierson, Odell, and Wagner conducted studies of the relation of age to achievement. Rudolph and Jones chose their subjects on the basis of later achievement in relation to age of graduation from college and age of entrance into college, respectively. All these findings show a relationship between age and scholarship.

Forsythe (22) studied 1306 men and 644 women enrolled at the University of Illinois during the years 1909-1910. He divided his subjects into two age groups and found the relationship between age and achievement within each age group. He found that age correlated to a higher degree

with grades within the older group of students than within the younger group. This finding led him to conclude that age has some relationship to scholarship.

Holmes (33, p. 609) considered students who entered Harvard University below the age of seventeen years and found that:

The superiority of the younger men persists through the three important ages, seventeen, eighteen and nineteen years for every grade of scholarship.

From this finding he concluded that "youth in itself is no creditable barrier to a college career."

In her study of 1080 subjects selected at random from Who's Who in America, Rudolph (65) found that those who graduate under the median age have a somewhat greater chance of success in life than those who do not.

Jones (37), in a study of the scholastic records of 287 freshman who entered Columbia University between 1915 and 1916, found that there is a definite correlation between lower age of admission and higher scholarship.

As a result of the study of 135 accelerates, Alltucker (1, p. 201) concluded that "pedagogical acceleration of the gifted is desirable."

In a survey of 10,000 Iowa high school seniors, Gerberich (24) found that at the time of graduation 33 percent of the girls and 25.5 percent of the boys were below the age of seventeen years. He also found that 25.3 percent of the girls and 28.3 percent of the boys were eighteen years of age or older at the time of graduation.



Considering the younger subjects to be gifted, he found the economic status of their parents to be markedly superior.

Wagner (76) reviewed the literature on the gifted and made generalizations about gifted students at the University of Buffalo. She stated that those who graduated from high school at a young age achieved somewhat higher marks than their older classmates.

Odell (53, p. 511) studied 2,000 students at the University of Illinois in relation to the effect of early entrance upon college achievement and stated that:

...students who enter college at a young age, maintain the high ranks which they were earning in high school, and remain in college longer than those who enter at the normal or at an older age.

For those who were sixteen or seventeen years of age at the time of entrance into the university, Odell did not believe that the losses due to social adjustment and other causes were in general "sufficient to outweigh the evils of holding back individuals who are able and often eager to go ahead."

Dwyer (16, p. 263) sought statistical evidence of a relationship between age and achievement. He correlated age and scholarship in his study at the University of Michigan and stated his results as follows:

...There is a negative relationship between age and freshman scholastic success up to 21 years and a positive trend from age 22.

In no case is the absolute value of coefficients large enough for individual prediction, but they are sufficiently large to warrant their use in making predictions by age groups.