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# Chinese Students in America: Qualities Associated with Their Success

*By*

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# Chinese Students in America: Qualities Associated with Their Success

## CHAPTER I

### STATEMENT OF THE PROBLEM

For the past fifty years, China has made a practice of sending students to the United States to be educated in American colleges and universities. Many psychological problems have arisen in connection with this practice, which, fundamental and important as they are, have never been solved or even explicitly formulated. A solution of them, however, would greatly aid in the improvement of methods for the preparation and selection of these students.

With the steady growth of the number of Chinese students in America and with the increasing emphasis placed upon the value of their American education in recent years, these psychological problems have come more and more to the fore. The need of a logical statement of some of them and of a scientific attempt towards their solution is manifest and pressing. Fortunately, the science of mental measurement, which has recently made great progress in America, will directly lend itself to the solution of these problems and indirectly open a new field in China for educational experimentation, of which the present investigation may be a beginning.

The problem in connection with the education of Chinese students in America emanates from a consideration of their success as a result of that education. Briefly stated, it comprises the following:

1. What should be considered as success of a Chinese student in America?
2. What are some of the qualities associated with it?
3. How are they related to it?
4. How are they related to one another?
5. How can the optimum amount of success be secured in the light of our knowledge of its relationship to the qualities associated with it?
6. What should be the proper method for the preparation and selection of the prospective Chinese student in America?



Questions 1 and 2 will be answered in the following paragraphs. It is in an attempt to answer questions 3, 4, 5, and 6 that the present investigation is undertaken.

Before any attempt is made to find out the relationship between success and the qualities associated with it, the first two questions proposed in the statement of the problem need to be answered. First, what should be considered as success of a Chinese student in America? Elusive and comprehensive as it may seem at first sight, success of a student may be said to be of two kinds: academic and non-academic. For this study, scholarship has been chosen as indicative of academic success and leadership as indicative of non-academic success. This twofold classification is unavoidable, inasmuch as the career of a student is devoid of any professional specialization that will give a single indication of his total life success.

A complete answer to the second question—What are some of the qualities associated with success?—presents almost insuperable difficulties. The total qualities associated with success, be it in the form of scholarship or leadership, are perhaps so numerous and overlapping that any attempt to list them short of an exhaustive study of all desirable human traits by means of regression equations would seem to fail in its purpose. We can enumerate off-hand under scholarship, for instance, such qualities as intelligence, industry, ambition, language ability and concentration, and under leadership such qualities as personality, character, initiative, decisiveness and force. These qualities in each group, however, overlap a great deal and our knowledge of them is at present so inadequate that it would seem difficult, if not impossible, to measure them objectively.

On the other hand, knowledge of English and knowledge of Chinese have been chosen as qualities associated with both scholarship and leadership, and this for various reasons. In the first place, in the judgment of the writer from the beginning of his investigation, these two qualities might be uncorrelated or independent of each other. This was found to be the case, as will be shown in the body of the thesis. Second, these qualities can be objectively measured, it being possible to get measures of them by means of tests and school marks in these languages. Third, in actual practice, the selection of a prospective Chinese student in America has been largely determined by his achievement in the knowledge of English and Chinese, as is so well exemplified by the competitive examina-

tion held in China for the purpose of selecting such students, in which tests of a knowledge of these two languages constitute two-thirds of the requirements.

This, then, brings out a more technical statement of the problem, namely, a study of the intercorrelation between scholarship, leadership, knowledge of English and knowledge of Chinese among Chinese students in American colleges and universities, based on such objective data as will be presently described.



## CHAPTER II

### EXPERIMENTAL MATERIAL

#### I. THE SUBJECTS

The subjects for this investigation were 664 Chinese students in America distributed among the following college and university centres: the number in parentheses after each college or group of colleges is the number of subjects from that college or group of colleges studied in this investigation: Baldwin Wallace College (9); University of Chicago (35); University of Cincinnati (6); Coe College, Iowa (8); Cornell University (46); University of Detroit (11); George Washington University (14); Grinnell College (4); Harvard University (37); Johns Hopkins University and University of Maryland (10); Leland Stanford Jr. University (11); Lehigh University (9); Marquette University, Milwaukee (14); Massachusetts Institute of Technology (26); Michigan University (45); University of Minnesota (12); New York University (20); Northwestern University (7); Oberlin College (20); Ohio State University (17); Oregon Agriculture College (7); University of Pennsylvania (22); Pomona College (6); Purdue University (18); University of Rochester (5); Schenectady Chinese Students' Club (3); Syracuse University (18); University of Washington, Seattle (14); University of Wisconsin (6); Yale University (15) and a group of girl students from Vassar College, Wellesley College, Bryn Mawr College and Mount Holyoke College amounting to (9). In the accompanying table is shown the distribution in these American colleges and universities of the Chinese students embodied in this study:

NUMBER OF STUDENTS	NUMBER OF COLLEGES
<i>over 50</i>	1
40-49	3
30-39	3
20-29	4
10-19	12
4- 9	14
	<hr/> 37

It must be remembered that the numbers of students in the foregoing table are the ones that were embodied in this study, while the actual numbers in these colleges are in many cases a little larger and in a few cases twice as large.

Among these students are included both the undergraduate and graduate students. High school students and those engaged in full time teaching are excluded from this study. They all represent students from China, of whom two-fifths depend, for their maintenance, upon either government or special scholarships and the other three-fifths upon their parents or relatives or upon themselves. In the analysis of facts, no distinction is made as to the course of study they take, or age and sex, or maintenance.

## 2. THE DATA

In order to make a study of these subjects in respect to their scholarship, leadership, knowledge of English and knowledge of Chinese, it was found necessary to gather all the relevant data then available. Inasmuch as the crux of the problem consists in the finding of the proper relationships of these four qualities rather than any objective measurement of them according to certain standardized criteria, the effort was focused upon a procedure whereby such relationships as should exist between them could be best secured. Therefore, the judgment of associates in the form of rankings was used, with all possible protection against certain defects inherent in the method, and validated by such other possible measures then available as high school marks, college marks, tests, and personal records. These sources of data were secured in the following manner.

*The Judgment of Associates.* The fact that the Chinese students in America generally group themselves in different college centres in small numbers, all associated closely with each other, and therefore thoroughly acquainted with one another, offers an opportunity seldom found elsewhere for ranking. For this study, in the case of those centres where the number of students exceeded twenty-four, the total number was divided into several convenient groups on the basis of mutual acquaintance or other affiliations. For the purpose of ranking, a number larger than twenty-four would be too unwieldy for any judge to make the ranking accurate, and a group smaller than four could hardly make the ranking significant. Consequently,

the size of groups in this study varies from four to twenty-four. The accompanying table will show the distribution of the number of groups of these 664 Chinese Students in America.

SIZE OF RANKING GROUP (i.e. No of Students Rated)	NO. OF GROUPS
20-24	8
15-19	12
10-14	14
5- 9	26
Less than 5	<u>4</u>
	64

The form of the original directions for the ranking sheet is reproduced here.

#### DIRECTIONS FOR THE RANKING SHEET

On the next page you will find a list of names of Chinese students in your locality or school, whom I presume you know well. Look the list through. If there are persons whom you do not know well, omit their names by marking a cross (X) after each. Omit also your own name by marking a cross (X) after it. These marked names will not be considered. Having done so, please observe the following procedure:

1. Look through the rest of the names. Decide which one in your judgment would be the best in Scholarship (See Definitions below), and put a figure "1" after his or her name in the Scholarship column.
2. Next decide which one would be the second best in Scholarship and put a figure "2" after the name in the same column. Next decide which one would be the third best in Scholarship and put a figure "3". Continue the same process until the Scholarship column has in it figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and so on, representing the ranks of these students from best to poorest in Scholarship.
3. Proceed likewise with each of the remaining columns, considering the rank each person would have in Leadership, Knowledge of English, and Knowledge of Chinese. (See Definitions below.)

#### DEFINITIONS

Scholarship: means ability in studies, as shown by school standing, degrees, honors, and other signs or evidences.

Leadership: means ability to take initiative, willingness to assume responsibility and ability to inspire confidence in others.

Knowledge of English: means knowledge to understand printed and oral English and to express well orally and in writing.

Knowledge of Chinese: means knowledge to understand printed Chinese and to express well in writing.

## RANKING SHEET

The ranking sheet is divided into five vertical columns, headed with the following captions: Name, Scholarship, Leadership, Knowledge of English, and Knowledge of Chinese, as shown on page 14, in which it has been filled with rankings and their transmutations.

In April, 1920, these ranking sheets were sent with return envelopes to 926 Chinese students grouped under 62 college or university centres. Out of these, 465 or a little over 50 per cent returns were received. This means that on the average each person is ranked or judged by half of the people in the group in which he is one. This is evidenced by the later finding that the largest number of judgments given to a person is 12 which is one half of the total number of 24 on the list.

The individual who is judging may not know well enough all the qualities in the individuals judged. This results in a different number of people within a group being ranked by the same judge for the four qualities. Thus judge X in group Q judges 22 people of his group for scholarship, 23 for leadership, 23 for knowledge of English, and 14 for knowledge of Chinese.

Thus in all we find there are 656 people ranked in scholarship; 631 in leadership; 664 in knowledge of English; and 590 in knowledge of Chinese. This would mean that the Chinese students know most about the knowledge of English of their associates and least about their knowledge of Chinese.

*Individual Records.* In connection with the ranking sheet, a questionnaire was sent out for the purpose of gathering individual records which would later on lend themselves to the validation of the rankings. The original sheet is here reproduced.

## QUESTIONNAIRE

1. Name and address.....
2. School attending..... Major course.....
3. Degrees obtained (where and when).....
4. How many years of English did you have in China?.....
5. School in China where you got most of your English.....
6. When did you come to the U. S. A.? Month..... Year.....
7. Since coming here, if you have been president, vice-president, secretary, general secretary, treasurer, or manager, please fill out the following:

<i>Name of Organization</i>	<i>Name of Office Held</i>	<i>Year to Year</i>
.....	.....	.....
.....	.....	.....
.....	.....	.....

8. If you have been editor, contributor, or reporter of any magazines, Chinese or English, please fill out the following:

<i>Name of Magazine</i>	<i>Name of Position Held</i>	<i>Year to Year</i>
.....	.....	.....
.....	.....	.....
.....	.....	.....

9. If you have written books either in Chinese or in English, please fill out the following:

<i>Title of Book</i>	<i>Pages</i>	<i>Publishing Co.</i>	<i>Date of Publication</i>
.....	.....	.....	.....
.....	.....	.....	.....

10. If you have been awarded any scholarship, fellowship, assistantship, or instructorship, please fill out the following:

<i>Position</i>	<i>School</i>	<i>Subject</i>	<i>Year to Year</i>
.....	.....	.....	.....
.....	.....	.....	.....

11. If you belong to any honorary American fraternities, please fill out the following (e. g., Phi Beta Kappa, Sigma Xi, etc.):

<i>Name of Fraternity</i>	<i>School</i>	<i>When Elected</i>	<i>For Excellence in What Subject</i>
.....	.....	.....	.....
.....	.....	.....	.....

12. Mention any other honors which have come to you (e. g., graduated with honor, etc.).
- .....
- .....

A brief inspection of the questions will show that each one has its specific purpose and most of them are related to the four qualities in our study. The evaluation of these questions is found in Chapter VI.

*Test Scores in English.* Knowledge of English was the only quality, of which an objective measure could be secured by means of tests. Four sets of English tests were given to 42 of the subjects from eight different college centres, namely, Harvard, Yale, Columbia, New York University, University of Pennsylvania, Massachusetts Institute of Technology, Johns Hopkins University, and University of Maryland. These four sets are (1) Thorndike Alpha 2, Part II, (2) Reading Test I<sup>1</sup>, (3) Reading Test II<sup>1</sup>, and (4) Thorndike

<sup>1</sup>Reading tests I and II are of the type used in parts II and III of the Thorndike Intelligence Examination for High School graduates, Series 1919-1923.



Vocabulary Test. Alpha 2, Part II, is known to all who are familiar with tests. Reading Test I and II are each made of four parts. The vocabulary test is made of five parts. In order to show the degree of difficulty of the reading and vocabulary tests, a part of each is shown below.

#### SAMPLE OF READING TEST

Continuous improvements have enabled engineers to reproduce machinery of less and less weight for the same power, and at the same time to reduce the spaces required for its accommodation, the vibrations due to the working of the engines, and the consumption of fuel per horse power. For engines of high power, quadruple expansion has sometimes been adopted, scientific methods of balancing have been employed, improved qualities of steel and bronze have been introduced, the rate of revolution has been increased, and forced lubricating fitted. In the boilers higher steam pressures have been used, superheating in some cases being resorted to; the rate of combustion has been accelerated by supplying air under pressure in the stockhold or in the furnaces, and sometimes by placing fans in the exhaust to draw the air and products of combustion more rapidly through the fires; the former being known as *forced draught* and the latter as *induced draught*. In the navy, with the view of saving weight, water-tube boilers have been adopted, but boilers of this type have not yet been generally fitted in the mercantile marine. Steam pressures now in common use vary from 100 to 180 lb. per sq. in. in cargo ships; from 140 to 220 lb. in passenger ships, including the large Atlantic liners; from 210 to 300 lb. in large warships where water tube boilers are used; while in the destroyers and other classes of warships in which small water-tube boilers are used it varies from 180 to 230 lb. per sq. in.

1. Of the improvements noted, which do you think is the main cause of the reduction in vibration?
2. What do you think is superheated?
3. What feature of an ordinary stove would correspond to the exhaust?
4. Give two words which mean the same as "fitted" as used in line 7.
5. Name one product of combustion which would not be drawn through the fire by an induced draught.
6. Which of the reductions noted do you attribute most particularly to the increased rate of revolution?

#### SAMPLE OF VOCABULARY TEST

##### A I

Write Ha before every word that means something done with hands.  
 Write F before every word that means something done with feet.  
 Write E before every word that means something done with eyes.  
 Write M before every word that means something done with mouth.  
 Write T before every word that means a tool.  
 Write B before every word that means a part of the body.  
 Write S before every word that means a part of the house.  
 Write H before every word that means about ships, the sea, and sailing.



pulverize	jamb	regurgitate
ratchet	espy	scourge
scour	spinnaker	clamor
gape	slander	gimlet
adze	perambulate	glower
laud	quaver	polka
lugger	gable	mandrel
spokeshave	lathe	pancreas
converge	prate	newel
cajole	alcove	transcribe
wainscot	expostulate	fibula
pirouette	ulna	roam
brig	jettison	calipers
larynx	calumnate	upbraid
purses	wherry	cochlea
limn	dermis	dhow
ilium	swage	

*High School Marks in China.* High school marks in China were secured for 84 of the subjects. These marks, covering four years in high school, comprise (1) general averages, (2) marks in English, and (3) marks in Chinese. They were used to check up the validity of the judgment in the corresponding qualities and for the prediction of academic success in America on the basis of that in China. The detailed nature of these marks will be described in Chapter IV.

*College Marks in America.* Since not many students take any course in English and certainly none would take any in Chinese in America, the college marks in America are confined only to general averages as indications of scholarship. Marks of 122 students were secured from the Chinese Educational Mission and the Educational Bureau of the Chinese Ministry of Education, Washington, D. C. They were marks of different subjects and covered different numbers of years according to individual cases.

## CHAPTER III

### THE JUDGMENT OF ASSOCIATES

The judgment of associates in respect to a number of human traits, to result in high validity and reliability, must needs meet several rigorous conditions. First, there must be a thorough acquaintance among those who judge one another; second, the judgments must be comparable; third, the final judgment of a person in a particular trait must be the average of as many judgments as can be secured; fourth, there must be a common understanding of the trait to be judged. In this study, the first condition is well met by the unique situation of the Chinese students, in which they cultivate their familiarity to a high degree through meetings, discussions, conferences and all kinds of publications both in English and Chinese. The second condition has to be met by adequate statistical treatment as will be explained later. The third and fourth conditions are both rigorously conformed with.

#### I. TRANSMUTATION OF RANKINGS INTO SIGMA POSITIONS

When the rankings were returned, it was found that they were extremely unwieldy and irregular. For instance, in the same quality, say scholarship, a person might be ranked as one among 8 people by one associate, and then as one among 11 people by another. Supposing that he is ranked by both as the third, evidently the third among 8 people is not as high as the third among 11, for there are more cases in the latter. Again, it was also found that, on the same sheet ranked by any judge, under scholarship 18 people might be ranked; then under leadership 15 people might be ranked; under knowledge of English perhaps 19 people; under knowledge of Chinese most likely only 14 people. The difficulties with the way of obtaining correlations by means of Spearman's formula for ranking, are apparent. In order to surmount these two difficulties pointed out above, it was imperative to transmute these ranking values of 1, 2, 3, 4, 5, etc., into some other terms so that the third among 8 will have a different value from a third among 11 and that correlations could be computed not from the data of every sheet by

Spearman formula but from the data of all sheets on the basis of the number of judgments and by the Pearson product-moment formula.

The method for the transmutation of rankings into sigma positions can be found in Thorndike's *Mental and Social Measurements*, pages 116 and 221 ff. For the convenience of this study, which involves more than 2,000 such transmutations, a special table was made which shows the different comparable values of each number according to its place in groups of different sizes. If we look at number "1" in Table I, we will see that it has values, 1.10, 1.27, 1.40, 1.49, 1.59, etc., as it happens to occur in groups of 3, 4, 5, 6, 7, etc. On page 14 is shown the original ranking sheet filled out by the judge with figures which, in turn, are transmuted into sigma positions according to Table I. The number to the left in each column is the original rank. The signed number is the transmuted sigma value. The value of this procedure can be seen when we begin to add all the rankings of a person in a particular quality in terms of the plus and minus sigmas, which, as we have just observed, are of comparable values. Thus a person's final score in a quality is the algebraic sum of the sigma values divided by the number of judgments. To illustrate, if A's rankings in scholarship as given by five judges are "5" among 10, "5" among 12, "6" among 10, "4" among 13 and "7" among 11, then his average score in it in terms of sigma positions will be the sum of .13, .32, -.13, .61, -.23 divided by 5, or .14.

All the later correlations of judgments are made of these average sigma values thus computed.