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A COMPARATIVE STUDY OF LATTER-DAY SAINT MISSIONARIES
AND NON-MISSIONARIES IN SCHOLASTIC APTITUDE,
ACADEMIC ACHIEVEMENT, AND
VOCATIONAL INTEREST

A Thesis

Presented to

The Department of Educational
Research and Services

of

Brigham Young University

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by

Inez S. Searle

July, 1958

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Finally, the writer expresses her heartfelt gratitude to her son, Don, and to her parents, Mr. and Mrs. Dan Nelson Smith, for their encouragement and moral support throughout her college career and this study in particular.

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CHAPTER I

INTRODUCTION

Orientation to the Study

The Church of Jesus Christ of Latter-day Saints has an extensive and unique missionary system. Each year thousands of men and women are called to devote two or three years of their lives doing missionary work at their own expense. These individuals interrupt their education, postpone their marriage, or give up their employment in order to enter the mission field to proselyte for their church. Most of these missionaries are young adults. In April of 1957 there were 13,000 such missionaries in "mission fields" throughout the world.¹

Many of these missionaries upon returning home from their missionary activities attend colleges and universities. A large number of these returned missionaries enroll at Brigham Young University inasmuch as it is a church school.² It is commonly accepted among the laymen of the church as well as among the returned missionaries that the time spent in the mission field is equal in general development to two years of

¹Hugh B. Brown, Conference Address, Conference Report of April 5, 6, and 7 (April, 1957), p. 104.

²According to data compiled in the Student Coordinator's Office, 1,346 returned missionaries enrolled in September, 1957.

college education.³ Whether or not this is true may well be made the subject of objective research. This study was designed to bear somewhat upon this question.

Statement of the Problem

The purpose of this study is twofold: (1) to determine if there is a difference between the returned missionaries' academic achievement before and after their missionary experience; and (2) to determine if there is a difference between returned missionaries and non-missionaries in scholastic aptitude, academic achievement, and vocational interest.

This study is based upon the following hypotheses:

(1) that missionaries achieve better academically after their missionary experience than before their missionary experience; (2) that returned missionaries achieve higher scholastically than do non-missionaries; (3) that returned missionaries prefer a vocational interest pattern which includes the persuasive, the literary, and the social service areas more often than do non-missionaries.

The specific questions which need to be answered in relation to this study are:

1. Is there a difference between the returned missionaries' academic achievement before and after their missionary experience?

³Alma W. King, "A Survey of the Religious, Social and Economic Activities or Practices of the Returned Missionaries" (unpublished Master's thesis, Dept. of Religion, Brigham Young University, 1939), p. 78.

2. Is there a difference between returned missionaries and non-missionaries in the area of scholastic aptitude?

3. Is there a difference between returned missionaries and non-missionaries in academic achievement?

4. Is there a difference between returned missionaries and non-missionaries in vocational interests?

Reasons for Pursuing the Study

The writer was converted to The Church of Jesus Christ of Latter-day Saints largely through the influence exerted by a missionary while in the mission field. Since that conversion it has been the writer's privilege to spend five years at Brigham Young University among both returned missionaries and non-missionaries. Observations made of the missionaries while in their mission activities and while in their university activities have prompted this study.

Delimitations

The study includes only full-time enrolled Junior male students for the school year 1957-58. Both male and female returned missionaries are in attendance at Brigham Young University, but due to the preponderance of males the study excludes females.

Student interest and participation cards, completed in September, 1957, by the enrollees, were used as a source for determining who had or had not completed a mission. The reliability and validity of this information rests solely upon the word of the students.

Those men who had served in the Armed Forces were excluded from the missionary and non-missionary groups. It was thought that the experience in the Services would be an added influence and if veterans were used a biased sampling would result.

It is generally recognized that missionaries, due to the missionary experience, will be two or more years older than non-missionaries during their college attendance. In order to keep the disparity in age to a minimum between the experimental and control groups all of those below the age of twenty in the non-missionary group were eliminated. Thus, the sample for the control group was drawn from non-missionaries between the ages of twenty and thirty-one.

There would not have been subjects from which a sample could have been drawn had the writer attempted to control any other variables.

Definition of Terms

Returned missionary is defined as an individual who has completed two years or more away from home proselyting for The Church of Jesus Christ of Latter-day Saints. This period is referred to as a mission. Hereafter, returned missionary will be replaced by the word missionary.

Academic achievement refers to the grade-point average obtained in the courses taken throughout a quarter.

Scholastic aptitude refers to the ability to learn as measured by the American Council on Education Psychological Examination.

Vocational interest, for the purposes of this study, is an interest pattern which includes the persuasive, the literary, and the social service areas as measured by the Kuder Preference Record.

Method of Study

In order to complete this study data were obtained from four sources:

1. Student Coordinator's Office. A data card punched for IBM accounting, known as the student interest and participation card, filed in the Student Coordinator's Office was the source used for selection of the sample. Three groups of male students were segregated from these cards: (1) missionaries of non-veteran status, (2) non-missionaries of non-veteran status, and (3) non-missionaries of veteran status. Marital status and age were also recorded from the cards.

2. Counseling Service. Test scores for the American Council on Education Psychological Examination and the Kuder Preference Record were recorded from the individual student files in the Counseling Service. The grade-point average for each subject for his first two quarters enrolled in college were also copied from these records. For the missionaries, in most cases, the first two quarters' work in college were completed during 1952-53. These grades were made prior to their entry into the mission field. The non-missionary in most cases completed his first two quarters' work in 1955-56.

3. Scholarship and Financial Aids Office. A third

source of data was the Scholarship and Financial Aids Office. The grade-point average of the first two quarters of 1957-58 for each subject was copied from the scholarship records. This grade-point average should be for equivalent quarters in college for both groups if two years intervene as mission experience for the missionary.

4. Office of Admissions. For comparison on academic achievement the total grade-point average for full-time enrolled male students for the 1955-56 school year was obtained from the Office of Admissions. In order to determine the increment of the average male student each year from the Freshman, Sophomore, and Junior class status the median grade-point average for each of these classes was copied from the Cumulative Rankings filed in this office.

Subjects of study.--The subjects for the study were selected from the Fall, 1957, Junior, male students' roster at Brigham Young University. One hundred and eight missionaries of non-veteran status, who had at least two quarters of college before going on a mission, were the total number available for the experimental group. There were two hundred and nineteen non-missionaries of non-veteran status between the ages of twenty and thirty-one from which the control group could be drawn. The writer began with the number one subject and drew the odd numbered subjects until a total of one hundred and eight were obtained. Thus, the control group was composed of one hundred and eight non-missionaries of non-veteran status while the experimental group was composed of one hundred and

eight missionaries of non-veteran status. Each subject had a complete profile of ACE raw scores, grade-point averages, and raw scores for the Persuasive, the Literary, and the Social Service Scales of the Kuder Preference Record.

An additional group, composed of twenty-six veterans of non-missionary status, who had at least two quarters of college before going into the Services, was used as an additional control group in analyzing the differences in academic achievement in Chapter IV. These subjects had complete profiles similar to the subjects in the experimental and control groups.

Thirty-one, comprising 28.7 per cent, of the one hundred and eight missionaries were married. The mean age (range: 22-33) of this group was 23.5 years. Forty-three, comprising 39.7 per cent, of the one hundred and eight non-missionaries were married. The mean age (range: 20-31) of this group was 21.8 years. The mean age (range: 22-27) of the veterans, the additional control group, was 23.7 years. There is 11.0 per cent difference in the marital status and 1.7 per cent difference in the mean age of the two groups. Even though a greater percentage of the non-missionaries are married and the missionaries are more than a year older than the non-missionaries, marital status and maturity do not seem to be important factors in academic achievement.⁴

⁴Vern H. Jensen and Monroe H. Clark, "Do Married and Single College Students Differ with Respect to Achievement, Ability, and Personality?" (unpublished study, Counseling Service, Brigham Young University, 1957), pp. 1-5.

Jensen and Clark conducted a study on the Brigham Young University campus, with subjects from the 1957 graduating class, comparing thirty-six male students who had been married all four of their college years with thirty-six male students who had been single all four of their college years. The study was concerned with a comparison of the two groups in achievement, scholastic ability, and personality. The summary of their findings report that the single students obtained a higher grade-point average than the married students, but the difference was not statistically significant. It was also found, through comparing these single and married groups with a control group comprised of a random sample of graduating seniors, that maturity loses weight as an important factor in academic achievement.

Statistical method.--One statistical method was employed in treating the data. Mean scores were computed for: (1) the American Council on Education Psychological Examination for each group; (2) the total grade-point average for each group, the grade-point average for each group for the first two quarters in college, and the grade-point average for each group for the first two quarters of 1957-58; and (3) the Persuasive Scale, the Literary Scale, and the Social Service Scale of the Kuder Preference Record. The difference between mean scores on each of the foregoing was tested by use of the t-ratio method.

The t-ratio is a means by which it can be statistically concluded whether comparisons between two groups of data show

that the two groups are different in some way. The elements of the t-ratio permit its use in determining the probability that the obtained difference between the two groups does or does not represent a significant difference. In other words, whatever the obtained difference between the two groups, it can be accounted for in terms of chance factors in sampling. The obtained difference does not represent a real difference between the two groups. Ordinarily, in research, the t-ratio is considered to be significant at either the one per cent or five per cent level of confidence. To be significant at the one per cent level means that the probability is one out of one hundred that a difference as great as the one obtained would come about due to chance factors. The odds then would be 99:1 that the obtained difference represented a significant difference. To be significant at the five per cent level means that the probability is five cases out of a hundred that a difference as great as the one obtained is due to the operation of chance factors. Hence, the odds would be 19:1 that the obtained differences represent a significant difference.

Six comparisons were made with the mean scores of the grade-point averages. The first two t-ratios were concerned with each group, the missionary group and non-missionary group, being tested against itself. The missionaries' mean score for the first two quarters in college and mean score for the first two quarters of 1957-58 were tested for the difference. A like comparison was made for the non-missionary group. A third t-test was made between a group of missionaries of non-

veteran status and a group of veterans of non-missionary status. The analysis was made to show the difference in effect on academic achievement by the mission experience as compared to the time spent in the Armed Forces. An analysis of the difference between the means of missionaries and non-missionaries with regard to their total academic achievement (combination of grade-point average for the first two quarters in attendance at college and the first two quarters of 1957-58) was made. The next t-ratio was the difference between the missionaries and non-missionaries with regards to their first two quarters in college. A like comparison of the first two quarters of 1957-58 was computed.

The writer thought that the Persuasive Scale, the Literary Scale, and the Social Service Scale of the Kuder Preference Record best described the vocational interest pattern of missionaries. This was the reason for making an analysis of the difference on just three of the ten scales of the Kuder Preference Record.

Limitations of the Study

The number of subjects, one hundred and eight, in each of the experimental and control groups is not a very large sampling; however, the number was sufficient to justify conducting the study. One of the purposes of the study limited the eligibility of the subjects to be used in the experimental group. In order to determine if the missionary experience had any influence in improving academic achievement it was necessary that the missionary subjects had attended at least two

quarters of college prior to their mission call. There were only one hundred and eight missionaries who filled this requirement. It was also necessary that the subjects, of both the missionary and non-missionary groups, be of the same class rank in college so that their college experience would be equivalent. The male students of the Junior class were subjects which could fill the two necessities just mentioned as well as have raw scores of the same edition (1949) of the American Council on Education Psychological Examination and of the same form (C) of the Kuder Preference Record recorded in their individual files in the Counseling Service.

There were other variables which could not be controlled. Both married and single students were used. The missionaries were more than a year older than the non-missionaries. The only control placed upon either of these two factors, marital status and age, was the exclusion of subjects below the age of twenty from the control group. Had the writer attempted to place further controls upon these two factors there would not have been enough subjects remaining to conduct the study. However, one would expect the missionaries to be two years older than the non-missionaries as the time in the mission field extends over two or more years. There is only a 11.0 per cent difference in the marital status of the two groups. The missionaries are over a year older, but there are more of the non-missionaries married. For the purposes of this study, lack of more control than the one made upon age and marital status is not considered to be a serious limitation.

The writer recognizes that the experience in college and the experience in the mission field are not equivalent types of experience, but, for purposes of this study, the writer could see no better way to determine if there was a difference in academic achievement for missionaries before and after the missionary experience than to design the study as it has been designed. It is assumed that the missionary experience is equivalent to two years of college for general development and improving one's academic achievement is one aspect of general development.

Arrangement of Study

Chapter I has served as an introduction to the study. The literature concerned with the missionaries of The Church of Jesus Christ of Latter-day Saints is discussed in Chapter II. Also, in this same chapter, are discussions about the literature which deals with scholastic aptitude and the American Council on Psychological Examination, with academic achievement and grade-point averages, and with vocational interests and the Kuder Preference Record. The next chapter, III, treats scholastic aptitude. A comparison is made of missionaries and non-missionaries as to the Quantitative, the Linguistic, and the Total Scores of the American Council on Psychological Examination. In Chapter IV, Academic Achievement, the writer presents statistical comparisons and discussions related to grade-point averages of the missionaries and non-missionaries during two periods of their college life.

The fifth chapter treats the comparison of missionaries and non-missionaries on the preference of a vocational interest pattern. The Kuder Preference Record is the instrument employed to measure their interests. In the last chapter, Chapter VI, are found the summary of the study, the conclusions of the study, and the suggestions for further study.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The Church of Jesus Christ of Latter-day Saints was established in 1830 and by 1831 the missionary system had been instituted. It was estimated in 1936 that more than 21,000 men and women had filled missions for the Church.⁵ In December, 1955, it was stated that "since 1930 more than 71,000 men and women had served in foreign mission fields."⁶ There were 13,000 missionaries in April of 1957 as has already been established in Chapter I. This large increase in numbers is indicative of the importance of missionary activities. Likewise, the activities of the missionaries after returning home are also of church-wide interest.⁷

Previous Studies Concerning Missionaries

A number of surveys that deal with the social, economic, and religious aspects of the Latter-day Saints have been conducted, but little has been written about returned missionaries. One of the earliest surveys concerning Latter-

⁵Rudger Clawson, "The Returned Missionary--A Statistical Survey," The Improvement Era, XXXIX (October, 1936), 590.

⁶Hugh B. Brown, "The Blessings of the Gospel," The Improvement Era, LVIII (December, 1955), 923.

⁷Clawson, op. cit., p. 590.

day Saint missionaries was made under the direction of the Council of the Twelve in 1934-35.⁸ A suitable form was sent to each bishopric in the Church to obtain particular information on each returned missionary living in the Ward. The following information was desired: his name, his priesthood if a male, his year and place of mission call; his present record as a tithepayer, Word of Wisdom observance, and his office held; his church activity, his general influence, his business or profession, and his present employment.

The year 1936 appears to be the most productive period for writings that concern the missionaries. A Master's thesis by Alma W. King, which has already been used as a reference, concerned the activities or practices of sixty-two missionaries living in the Garland Ward of the Bear River Stake, Utah, during 1935-36. The religious attitudes and financial status of seventy-four missionaries residing within Wayne Stake were also surveyed in 1936.⁹ A similar study concerning fifty-seven missionaries of the Idaho Stake in Bannock County, Idaho, was made in 1935-36.¹⁰

Bryant S. Hinckley, a former mission president of the

⁸Ibid., p. 590.

⁹Leroi B. Groberg, "A Preliminary Study of Certain Activities, the Religious Attitudes and Financial Status of Seventy-four Returned Missionaries Residing Within Wayne Stake" (unpublished Master's thesis, Dept. of Religion, Brigham Young University, 1936).

¹⁰Reed G. Probst, "A Study of Fifty-seven Returned Missionaries of The Church of Jesus Christ of Latter-day Saints in Idaho Stake of Bannock County, Idaho, 1935-36" (unpublished Master's thesis, Dept. of Religion, Brigham Young University, 1936).

Northern States Mission, made a study in 1950 of the three hundred missionaries who had served under him while he was mission president of the Northern States Mission.¹¹ He mailed them a questionnaire concerning their personal, religious, social, and economic welfare.

Throughout these surveys and theses the emphasis was placed on the religious and economic aspects of the missionaries' activities. In two of the theses the educational status of the missionaries was checked to determine the average class in school attained by the particular group being studied. Scholastic aptitude, academic achievement, and vocational interest, as considered in this thesis, were not considerations in any of the previously mentioned surveys or theses. As nearly as the writer can ascertain this is a pioneer study in this particular area.

A Measurement of Scholastic Aptitude

The American Council on Education Psychological Examination was selected as a measurement of the ability to learn. For many years the American Council on Education Psychological Examination for both high school and college has been prepared by Drs. L. L. Thurstone and Thelma Guinn Thurstone; however, since January, 1948, the ACE Psychological Examination has been a part of the test offerings of the Cooperative Test Division

¹¹Bryant S. Hinckley, "After Ten Years," The Improvement Era, LIII (November, 1950), 876.

of Educational Testing Service.¹²

The purpose of the examination is "to appraise what has been called scholastic aptitude or general intelligence."¹³ There is one form of the current 1949 edition for college freshmen. The examination consists of six tests and, in order to alleviate fatigue, the linguistic and quantitative tests are alternated. These tests were included in test experiments with factorial analyses to determine the primary abilities. The experimental studies justified grouping the six tests in two general classes as follows:¹⁴

Quantitative Tests
(the Q-score)

Arithmetical reasoning
Number series
Figure analogies

Linguistic Tests
(the L-score)

Same-opposite
Completion
Verbal analogies

Many studies have been made in relation to the Quantitative, the Linguistic, and the Total scores of the ACE. Under the direction of McPhail two studies were conducted, one at the secondary-school level and one at the college-freshman level, to determine the significance of the Q and the L scores.¹⁵ The college-freshman level study was based on data

¹²Cooperative Test Division of Educational Testing Service, Manual of Directions for High School Editions (Princeton: Educational Testing Service, 1953).

¹³Cooperative Test Division of Educational Testing Service, Manual of Instructions for College Freshmen (Princeton: Educational Testing Service, 1949), p. 2.

¹⁴Ibid.

¹⁵A. H. McPhail, "Q and L Scores on the ACE Psychological Examination," School and Society, LVI (1942), 248-251.

obtained from the records of the class of 1942 at Brown University. A correlation of the Q and L scores was made with first-semester and first-year academic averages for each of three degree seeking groups. The degree seeking groups were chemistry, engineering, and the arts. McPhail found that the Q Score has no more significance for the freshman scientific and technical curricula than does the L Score, but that for the first-year averages made by the arts group the L Score is significantly better than the Q Score.

At Georgia State College for women, Bolton made a study to determine the predictive value for academic achievement of the tests given to freshman women entering the college.¹⁶ The first question in the study considered whether the ACE had greater value for counseling students if the Q and the L Scores as well as the Total Scores were used to analyze the mental abilities of students. Total grade-point average for a year's work was used as the criterion of academic success. It was determined that the ACE Scores had more value when all three scores, the Q, the L, and the T, were used to analyze the mental abilities of students. The Total Score predicted better than either of the part scores.

Stone used the American Council on Education Psychological Examination as a measure of scholastic aptitude in his study of differential prediction of academic success.¹⁷ He

¹⁶Euri Belle Bolton, "Predictive Value for Academic Achievement of the A.C.E. Psychological Examination Scores," Peabody Journal of Education, XXIX (1951), 345-360.

¹⁷Joies B. Stone, "Differential Prediction of Academic Success at BYU" (unpublished Ph.D. dissertation, Dept. of Educational Psychology, University of Utah, 1952).

found that the Q Score was next in efficiency to the high school grade-point average in predicting success in the physical science curriculum. The L Score was the most effective single predictor of success in the social science curriculum.

In regards to validity and reliability of the test Donald Super says:

As these tests and items have been selected and modified from earlier tests and tried out over a period of nearly twenty years on large numbers of subjects, with adequate funds for necessary research, they constitute an unusually valid and reliable instrument.¹⁸

Inasmuch as academic prediction is the purpose of the test, the relationship with achievement has been intensively studied. Quoting Super, "The earlier editions yielded validity coefficients ranging from .17 to .81 for grade-point averages and from .34 to .60 with freshmen marks. . . ."¹⁹ Stone correlated grade-point averages of specific subjects in the social studies curriculum and in the sciences curriculum with the Total ACE Score.²⁰ The following correlations were obtained:

<u>Social Studies</u>		<u>Sciences</u>	
History	.30	Chemistry	.45
Humanities	.20	Geology	.35
Political Science	.35	Mathematics	.33

The correlation between test scores and various achievement criteria may be expected to differ widely from one institution to another, depending upon the range of ability among such

¹⁸Donald E. Super, Appraising Vocational Fitness (New York: Harper & Bros., 1949), p. 115.

¹⁹Ibid., p. 120.

²⁰Stone, op. cit., p. 27.

variant student groups.

There is probably more material concerning the educational significance of the American Council on Education Psychological Examination than there is for any other single test.

Crawford and Burnham write:

It is doubtless one of the best modern, general intelligence tests; like any other instrument, however, it should be properly calibrated to meet the demands of a given situation or task. Our criticisms in fact pertain less to composition of the test per se than to inadequacy, thus far, of its evaluation in meaningful terms . . . norms pertinent to the respective educational standards of each college should be established de novo and critical points (e.g., for admission, scholarship awards or advanced placement) also determined locally.²¹

It is a reliable and valid test of scholastic aptitude or general intelligence at the college level.²² The American Council on Education Psychological Examination is one of the best single predictors of academic success.²³

Grades as a Measure of Success

The writer was desirous of selecting the measuring device most widely employed as a criterion of academic achievement. G. E. Maxwell points out that "grading of students is the most extensive measuring device now used in educational institutions."²⁴ Brigham Young University employs a grading

²¹Albert B. Crawford and Paul S. Burnham, Forecasting College Achievement (New Haven: Yale University Press, 1946), p. 99.

²²Super, op. cit., p. 123.

²³W. C. Wallace, "Differential Predictive Value of the ACE Psychological Examination," School and Society, LXX (1949), 24.

²⁴G. E. Maxwell, "The Grading of Students," School and Society, VI (July, 1917), 113.

system which uses the letters A, B, C, and D to denote credit earned, and E to indicate no credit earned.²⁵ A point system has been devised where four is equivalent to A, three to B, two to C, one to D, and zero to E. Usually, no better index of academic achievement than grade-point average is available.²⁶

A Measurement of Vocational Interest

Abilities and interests seem to be independent variables with each contributing to the success of the individual. The Kuder Preference Record was the interest inventory selected for measuring vocational interests. Work with this inventory was initiated during the school year 1934-35 by G. Frederic Kuder at Ohio State University, and Form C, the form administered to the subjects of this study upon their entrance into Brigham Young University, was published in 1948.²⁷ E. G. Chambers best stated the purpose of the Kuder Preference Record when he said "this test is an ingenious attempt to obtain an objective score for a person's occupational preferences with the aim of helping in vocational guidance."²⁸ Emphasis

²⁵A Statement of Policies Standards and Procedures to Guide the Faculty, Faculty Handbook (Provo, Utah: Brigham Young University Press, September, 1957).

²⁶Arthur E. Traxler, "Some Comments on the Prediction of Differential Achievement in a Technological College," Journal of Applied Psychology, XXVII (1943), 176-179.

²⁷G. Frederic Kuder, Examiner Manual for Kuder Preference Record (Chicago: Science Research Associates, 1956), p. 2.

²⁸E. G. Chambers, "The Kuder Preference Record," The Third Mental Measurements Yearbook, ed. Oscar Buros (New Brunswick: Rutgers University Press, 1949), p. 661.

is placed on interests rather than capacities.

The Preference Record consists of preference items arranged in triads. There are 168 such groups with three occupations represented in each group. The subject is requested to place the three occupations in the order of his preference by selecting the one he likes the most and the one he likes the least. Scores can be computed for ten occupational areas. They are: (0) Outdoor, (1) Mechanical, (2) Computational, (3) Scientific, (4) Persuasive, (5) Artistic, (6) Literary, (7) Musical, (8) Social Service, (9) Clerical.

A. H. Brayfield writes:

Kuder attempts to identify certain generalized activity patterns which are psychologically meaningful. This approach to the measurement of interest or preference is in line with factor analysis studies of the problem as well as with clinical experience using interest inventories. . . . A point favoring the Kuder blank is the extreme care taken in its construction and standardization.²⁹

The Kuder Preference Record is very simple to score and is one of the two most extensively used vocational interest inventories.

There have been many studies made to ascertain the validity of this interest inventory. Super points out:

Enough data are on hand for the Kuder to be used with some confidence in vocational guidance, although the actual numbers in any one group are still generally small. . . . The patterns of interest scores tend to differ according to expectation. Accountants, for example, are

²⁹Arthur H. Brayfield, "The Kuder Preference Record," The Third Mental Measurements Yearbook, ed. Oscar Buros (New Brunswick: Rutgers University Press, 1949), p. 640.

significantly high on computational, literary, and clerical interests.³⁰

In other validity studies it has been demonstrated that a relation exists between preference scores and achievement.

Triggs reported in one of her studies that she found correlations for men of .32 between scientific interests and general scientific achievement and of .40 between literary interests and achievement in English literature.³¹

Numerous reliability studies of the Kuder Preference Record have been made. A table of reliabilities with regards to the ten scales is a result of one of the studies. It is based on one thousand men as the norm group. The correlations are: Outdoor .92, Mechanical .92, Computational .85, Scientific .85, Persuasive .91, Artistic .86, Literature .86, Music .86, Social Service .89, and Clerical .86.³² These correlations justify the selection of the Kuder Preference Record as a measurement of vocational interest.

³⁰Donald E. Super, "The Kuder Preference Record," The Third Mental Measurements Yearbook, ed. Oscar Buros (New Brunswick: Rutgers University Press, 1949), p. 640.

³¹Kuder, op. cit., p. 20.

³²Ibid., p. 21.

CHAPTER III

SCHOLASTIC APTITUDE

Introduction

The word aptitude is not consistently employed, in the literature concerned with tests, in terms of one single definition. It is generally accepted, however, as the probable rate of learning or the ability to learn. The writer agrees with Super that it is wise to evade detailed discussions and to conclude that:

Whether largely innate or largely acquired, the aptitudes about which we know something appear to become crystallized in early childhood and that after that they are relatively constant. They may then perhaps be affected by especially drastic or traumatic experiences, but can otherwise be thought of as not being appreciably affected by education, special training, or experience.³³

Data, Method, and Results

Prior to 1957, each Freshman upon entering Brigham Young University was required to take the American Council on Education Psychological Examination (ACE). Because of the accessibility of the scores and because of the validity and reliability of the ACE it was selected as the measure of scholastic aptitude. The Total raw score was given major emphasis as the measure of scholastic aptitude instead of the Quantitative or Linguistic scores separately, because of "the lack of

³³Super, Appraising Vocational Fitness, p. 61.

any marked differences between the predictive values of the two parts."³⁴ A more recent study, concerned with the prediction of academic success, employed the Total ACE score. Stone found that the Total ACE in combination with high school grade-point average provides the basis upon which academic success can be predicted.³⁵

The writer used the four sources mentioned in Chapter I to obtain the raw scores of the ACE, grade-point averages, and raw scores of the interest areas. Each of the subjects was required to take the American Council on Education Psychological Examination at entrance into Brigham Young University. The raw scores were recorded in their individual files in the Counseling Service. The Quantitative, the Linguistic, and the Total raw scores were obtained for each of the subjects from this source. There were one hundred and eight subjects of the experimental group, missionaries of a non-veteran status, who had a complete profile. The subjects used in the control group, one hundred and eight non-missionaries of non-veteran status, also had a complete profile of like scores. According to the student interest and participation cards filed in the Student Coordinator's Office these subjects were regularly enrolled male Junior students of the September, 1957, registration.

³⁴Wallace, op. cit., p. 24.

³⁵Joics B. Stone, "Differential Prediction of Academic Success at Brigham Young University," Journal of Applied Psychology, XXXVIII (April, 1954), 109-110.

The writer wished to determine if there was a difference between missionaries and non-missionaries in scholastic aptitude. Mean scores for each, the Quantitative, the Linguistic, and the Total ACE raw scores, were computed for the two groups. An analysis of the difference of each, the Q, the L, and the T, was tested by means of the t-ratio. The analyses are presented in Table 1.

TABLE 1
ANALYSIS OF DIFFERENCE BETWEEN MISSIONARIES
AND NON-MISSIONARIES WITH REGARDS
TO THE ACE SCORES

ACE Scores	Mean of Missionaries	N	Mean of Non-missionaries	N	t	P
Q	41.14	108	41.28	108	0.09	
L	62.39	108	57.78	108	0.54	< .7
T	104.04	108	99.15	108	1.50	< .2

With reference to the Q score the missionaries had a mean of 41.14 while 41.28 was the mean of the non-missionaries. There was no significant difference between the two groups in mathematics as shown by an analysis of the data. On the L score the missionaries had a mean of 62.39 while 57.78 was the mean of the non-missionaries. An analysis of the data shows there was no significant difference between the missionaries and non-missionaries in linguistics. The mean of the missionaries is 4.61 higher than the mean of the non-missionaries. The missionaries had a mean of 104.04 while the mean of the

non-missionaries was 99.15 on the Total ACE score. Analysis of these data shows there was not a significant difference between the missionaries and non-missionaries in scholastic aptitude. Ordinarily in research, the .05 level, and beyond, of confidence is considered significant. It may be noted that the mean of the missionaries on the Total ACE score is higher by 4.89 than the mean of the non-missionaries.

Conclusions

1. The evidence presented shows there is no significant difference between missionaries and non-missionaries in the Quantitative score of the American Council on Education Psychological Examination. There is an indication that the missionaries and non-missionaries are well matched in quantitative ability.

2. There is no significant difference, according to an analysis of the data, between missionaries and non-missionaries in the Linguistic score. A difference of 4.61 in the means, which favors the missionaries, indicates that the missionaries may be a little more proficient in linguistics than the non-missionaries.

3. The present study shows no significant difference between the missionaries and non-missionaries in scholastic aptitude according to the Total ACE score. This would indicate that the ability to learn is fairly well matched between the missionaries and non-missionaries.

CHAPTER IV

ACADEMIC ACHIEVEMENT

Introduction

The grade-point average was the criterion selected to measure academic achievement. It has been established that no better index of scholastic success is available.³⁶ Due to the fact that Brigham Young University did not institute the 4.0 grading system until September, 1956, all of the grade-point averages prior to that date were equated with the 4.0 system by addition of one point.

Many laymen of The Church of Jesus Christ of Latter-day Saints, as well as missionaries, assume that the missionary experience improves academic achievement. Missionaries frequently state that they achieve higher scholastically because of their missionary experience. Consequently, this study is based upon the hypothesis that missionaries achieve higher scholastically as a function of their missionary experience. The writer also hypothesized, in relation to academic achievement, that missionaries achieve higher scholastically than do non-missionaries. Answers to the following two questions will be sought: (1) Is there a difference between missionaries'

³⁶Traxler, op. cit., pp. 176-179.

academic achievement before and after their mission experience, and (2) is there a difference between missionaries and non-missionaries in academic achievement?

Data and Method

The same two groups of subjects, one hundred and eight missionaries and one hundred and eight non-missionaries, were studied as to academic achievement. An additional group of twenty-six veterans of non-missionary status was used as an additional control factor later in this chapter.

Grade-point averages for each subject for two different periods of his college career were recorded. The two periods are: (1) the first two successive quarters in college, and (2) the first two quarters of the 1957-58 school year. These two periods were selected so that the missionaries had the opportunity to attend college for at least two quarters before entering the mission field. For the missionaries, in most cases, the first two quarters' work in college were completed during 1952-53. The non-missionary in most cases completed his first two quarters' work in 1955-56. These grade-point averages should be for equivalent quarters in college for both groups.

For purposes of comparison, the total cumulative grade-point average for the 1955-56 male students of the Freshman, Sophomore, and Junior classes was obtained. This average was used as an additional control factor later in the chapter.

The t-ratio method was employed for an analysis of the

difference between missionaries and non-missionaries with regard to academic achievement. Six comparisons were made.

The t-test and the purpose of each was:

1. An analysis of difference between the means of missionaries' grade-point average the first two quarters in college and the first two quarters of 1957-58. This t-test was computed to determine the difference, if any, between the missionaries' academic achievement before and after their mission experience.
2. An analysis of difference between the means of non-missionaries' grade-point average the first two quarters in college and the first two quarters of 1957-58. This t-test was made to learn the difference, if any, between the non-missionaries' academic achievement the first two quarters in college and the first two quarters of 1957-58. The result of this t-test was used as a comparison for the missionaries' academic achievement before and after the mission experience.
3. An analysis of difference between the means of veterans of a non-missionary status and missionaries of a non-veteran status with regard to academic achievement. This t-test was made to learn the difference, if any, in academic achievement between those of a veteran's status and those of a missionary non-veteran status. The time spent in the Armed Forces is usually equivalent to the time spent in the mission field by the missionary. The result of this t-test was used as a comparison of academic achievement for those who spent time in the Armed Forces as compared with those who spent time in the mission field.
4. An analysis of the difference between the means of missionaries and non-missionaries in grade-point average on the first two quarters in college. This was computed to learn the difference, if any, between the two groups in academic achievement in the first period of college experience.
5. An analysis of the difference between the means of missionaries' and non-missionaries' grade-point average for the first two quarters of 1957-58. This t-test was made to see what difference, if any, existed between the two groups after the missionary had completed his mission experience and returned to college.
6. An analysis of difference between the means of missionaries and non-missionaries with regard to academic achievement (combination of GPA for first two quarters

in college and GPA for first two quarters of 1957-58). This t-test was computed to determine the difference, if any, in the academic achievement of missionaries and non-missionaries.

Results and Discussions

Academic achievement before and after the missionary experience.--One of the purposes of this study was to determine if there was a difference between the missionaries' academic achievement before and after their mission experience. In order to make this comparison a t-test was made between the mean grade-point for the first two quarters in college and the mean grade-point for the first two quarters of 1957-58. The analysis is presented in Table 2.

TABLE 2

ANALYSIS OF DIFFERENCE BETWEEN THE MEANS OF
MISSIONARIES' GPA THE FIRST TWO QUARTERS
IN COLLEGE AND THE FIRST TWO
QUARTERS OF 1957-1958

	Mean of First Two Quarters in College	N	Mean of First Two Quarters in 1957-58	N	t	P
Before and after GPA	2.61	108	2.71	108	1.20	<.3

For the missionaries the mean of the first two quarters in college was 2.61 while the mean was 2.71 for the first two quarters in 1957-58. The analysis shows there was no significant difference between the missionaries' grade-point average before and after their mission experience.

Difference in academic achievement of non-missionaries.

As a comparison with the missionaries' academic achievement, the writer thought it wise to determine if there was a difference between the mean grade-point for the first two quarters in college and the mean grade-point for the first two quarters of 1957-58 for the non-missionaries. The following table is used to present the analysis.

TABLE 3

ANALYSIS OF DIFFERENCE BETWEEN THE MEANS OF
THE NON-MISSIONARIES' GPA THE FIRST TWO
QUARTERS IN COLLEGE AND THE FIRST
TWO QUARTERS OF 1957-58

	Mean of First Two Quarters in College	N	Mean of First Two Quarters in 1957-58	N	t	P
Grade-point average	2.36	108	2.37	108	.14	<.9

For the non-missionaries the mean of the first two quarters in college was 2.36 while the mean was 2.37 for the first two quarters in 1957-58. This analysis shows there was no significant difference between the non-missionaries' grade-point average during these two periods of their college experience.

These findings are logical in light of the Cumulative Ranking for full-time male students of the 1955-56 school year

obtained from the Office of Admissions.³⁷ The Cumulative Ranking for 1956-57 was not completed; consequently, the 1955-56 was employed. The median grade-point for the Freshmen at the end of the first three quarters in college was 2.08. A median grade-point of 2.48 was recorded for the Juniors at the end of nine quarters in college. The increment was .40 from the end of the first year in college through the end of the third year. For the six quarters there was .067 increment each quarter if the increment was equal for each quarter. Those data are recorded in the following table.

TABLE 4

CUMULATIVE RANKINGS FOR FULL-TIME MALE
STUDENTS 1955-56 SCHOOL YEAR

Group	N	Median Grade-Point
Freshmen	1892	2.08
Sophomores	1428	2.30
Juniors	1120	2.48
Seniors	795	2.61

The reader should note the decrease in the number of students for each successive year. This study is concerned with the same subjects, missionaries and non-missionaries, through their Freshman, Sophomore, and Junior status.

The grade-point medians for the first two quarters in

³⁷The Cumulative Rankings were computed on the three point system, but the writer has converted the figures to the four point system for this study.

college and for the first two quarters in 1957-58 for both the missionaries and non-missionaries was computed. The median grade-point for the missionaries at the end of the first two quarters in college was 2.56. A median grade-point of 2.75 was computed for the missionaries at the end of eight quarters in college. For this study the writer obtained grade-point averages for only the first two quarters of the Freshman year and only the first two quarters of the Junior year for both the missionaries and non-missionaries. Hence, the increment is computed for the six quarters which intervene on the basis of grade-point averages for only four quarters. The increment was .19 from the end of the first two quarters in college through the end of the first two quarters of 1957-58. For the missionaries for the six quarters there was .03 increment each quarter if the increment was equal for each quarter. The median grade-point for the non-missionaries at the end of the first two quarters in college was 2.38. A median grade-point of 2.44 was computed for the non-missionaries at the end of eight quarters in college. The increment was .06 from the end of the first two quarters in college through the end of the first two quarters of 1957-58. For the non-missionaries for the six quarters there was .01 increment each quarter if the increment was equal for each quarter. Table 5 contains these data.

It may be noted that the missionaries' grade-point medians for their pre- and post-missionary experience are higher than those recorded in Table 4 for full-time male

TABLE 5

MEDIAN GRADE-POINTS FOR MISSIONARIES
AND NON-MISSIONARIES

Groups	N	First Two Qtrs. in College	N	First Two Qtrs. in 1957-58
Missionaries	108	2.56	108	2.75
Non-missionaries	108	2.38	108	2.44

Junior students of the 1955-56 school year. Also, their grade-point medians are higher than those of the non-missionaries.

Difference between missionaries and veterans in academic achievement.--As a comparison of what effect, if any, might be made upon the total grade-point average by the time spent in the mission field as compared to the time spent in the Armed Forces the grade-point averages for a group of twenty-six veterans of a non-missionary status were obtained. These twenty-six subjects were the total number of male veteran non-missionary Junior 1957-58 enrollees available who had at least two quarters of college work before entry into the Services. This makes the college experience and time intervals equivalent for the missionary non-veterans and non-missionary veterans. The total grade-point average for the twenty-six non-missionary veterans was compared with the total grade-point average of one hundred and eight missionaries of a non-veteran status. A t-ratio was computed to learn if a

difference existed between the two groups. The analysis is presented in Table 6.

TABLE 6

ANALYSIS OF DIFFERENCE BETWEEN THE MEANS OF
NON-MISSIONARY VETERANS AND MISSIONARY
NON-VETERANS WITH REGARD TO
ACADEMIC ACHIEVEMENT

	Mean of Non-veteran Missionaries	N	Mean of Non-missionary Veterans	N	t	P
Total GPA	2.68	108	2.39	26	.62	< .6

The missionaries had a mean of 2.68 while the veterans had a mean of 2.39. Analysis of these data shows there was no significant difference between the missionaries and veterans. It would appear that the two experiences bear equivalent influence upon academic achievement.

Difference between first two quarters in college.--In order to compare the academic achievement of missionaries and non-missionaries the first t-ratio computed was between the grade-point averages of the first two quarters in college of each of the two groups. The analysis is presented in Table 7.

The missionaries had a mean of 2.61 while the mean of the non-missionaries was 2.36. Analysis of these data show there was a significant difference between the missionaries and non-missionaries with regard to the grade-point average

TABLE 7

ANALYSIS OF DIFFERENCE BETWEEN THE MEANS OF
MISSIONARIES AND NON-MISSIONARIES IN GPA
OF THE FIRST TWO QUARTERS IN COLLEGE

	Mean of Missionaries	N	Mean of Non- Missionaries	N	t	P
GPA of first two quarters in college	2.61	108	2.36	108	3.31	<.001

for the first two quarters in college. The difference between the means was found to be significant at the .001 level of confidence. This means the chances were less than one in a thousand that the differences found here were due to chance.

Difference between first two quarters of 1957-58.--To learn the difference, if any, between the missionaries and non-missionaries in academic achievement after the missionaries had completed their missions, a t-test was computed on the grade-point averages of the grades for the first two quarters of 1957-58. The following table is used to present this analysis.

TABLE 8

ANALYSIS OF DIFFERENCE BETWEEN THE MEANS OF
MISSIONARIES' AND NON-MISSIONARIES' GPA
FOR THE FIRST TWO QUARTERS OF 1957-58

	Mean of Missionaries	N	Mean of Non- Missionaries	N	t	P
GPA of first two quarters of 1957-58	2.71	108	2.37	108	4.30	<.001

The missionaries had a mean of 2.71 while the mean of the non-missionaries was 2.37. Analysis of the data shows there was a significant difference between the missionaries and non-missionaries with regard to the grade-point average of the first two quarters of 1957-58. The difference between the means is significant at the .001 level of confidence. This means the chances were less than one in a thousand that the differences found here were due to chance.

Difference in academic achievement.--In order to compare the academic achievement of missionaries and non-missionaries on their total grade-point averages obtained (combination of GPA for the first two quarters in college and GPA for the first two quarters in 1957-58) the t-ratio method was used again. The data are tabulated in Table 9.

TABLE 9

ANALYSIS OF DIFFERENCE BETWEEN THE MEANS OF
MISSIONARIES AND NON-MISSIONARIES WITH
REGARD TO ACADEMIC ACHIEVEMENT

	Mean of Missionaries	N	Mean of Non-missionaries	N	t	P
Total GPA	2.68	108	2.36	108	4.67	<.001

The missionaries had a mean of 2.68 while the mean of the non-missionaries was 2.36. Analysis of the data show there was a significant difference between the missionaries and non-missionaries with regard to the total grade-point

average as obtained. The difference between the means is significant at the .001 level of confidence. This means the chances were less than one in a thousand that the differences found here were due to chance.

Conclusions

1. The first purpose of this study was to determine if there was a difference between missionaries' academic achievement before and after their mission experience. Evidence presented in this chapter refutes the hypothesis that missionaries achieve better academically after their missionary experience than before their missionary experience. There was no significant difference in the missionaries' academic achievement before and after their mission experience.

2. The second hypothesis which this study was based upon stated that missionaries achieve higher scholastically than do non-missionaries. Evidence presented in this chapter supports this hypothesis. Missionaries did achieve higher scholastically than did the non-missionaries in both the pre- and post-mission experience.

3. It was also found in this study that veterans who spent time in the Armed Forces, which is usually equivalent to the time spent in the mission field, achieved as high scholastically as did the missionary non-veterans. It would appear that the two experiences bear the same influence upon academic achievement.

4. Evidence was presented to show that the grade-

point medians for the first two quarters in college and for the first two quarters of 1957-58 for the missionaries was higher than that of the equivalent ranking full-time male Junior students of 1955-56. Also, their grade-point medians are higher than those of the non-missionaries.

CHAPTER V

VOCATIONAL INTEREST

Introduction

Edward K. Strong has pointed out:

When vocational interest is defined not as a single choice but as "the sum total of many interests that bear in any way upon an occupational career," then we find surprising permanence, certainly among adults and college students and to a somewhat lesser degree among high school students.³⁸

Out of the ten vocational interest areas inventoried by the Kuder Preference Record the writer selected the three which, in her opinion, would best describe the interest pattern of a potential missionary. The three areas are: (1) Persuasive-- a high score in this area means that an individual likes dealing with people to sell and promote projects; (2) Literary-- a high score on this scale indicates a strong interest in reading and in writing; (3) Social Service-- a high score on this scale indicates a preference for helping people.³⁹

An interest inventory implies what the person wants to do and which path he should follow in order to obtain employment and satisfaction in life. Some interests increase and

³⁸Edward K. Strong, Vocational Interests of Men and Women (Stanford University: Stanford University Press, 1943), p. 21.

³⁹G. Frederic Kuder, Profile Leaflet (Chicago: Science Research Associates, 1954), p. 3.

some decrease with age. In one of his studies Strong concluded:

The primary conclusion regarding interests of men between 25 and 55 years of age is that they change very little. At 25 years of age he is largely what he is going to be and even at 20 years of age he has acquired pretty much the interests he will have throughout life.⁴⁰

The mean age of the missionary subjects was 23.5 years while 21.8 years was the mean age of the non-missionary group. Kuder Preference Records were administered to these subjects at entry into Brigham Young University and without a retest it cannot be determined whether their interests changed during this time span.

A study, which was concerned with vocational choices of college students, was conducted by Sisson.⁴¹ Graduates of the classes of 1929, 1930, 1931, and 1932 of Wesleyan College were subjects of the study. The data employed included the vocational choice of these subjects at the time of entrance to college. It was found that slightly over one-third of Wesleyan men enter careers which were their indicated preference at entrance to college. Preference for and then entrance into the professional fields were more stable. The four most stable choices were the ministry, teaching, medicine, and law.

It is possible that the college and missionary experience affected the interest pattern of some of these subjects.

⁴⁰Strong, op. cit., p. 313.

⁴¹Donald E. Sisson, "The Predictive Value of Vocational Choices of College Students," School and Society, XXXVII (May, 1938), 646-648.

Jensen made a study of certain factors which influence changes in vocational interests of male college students.⁴² The subjects were male students of Brigham Young University. Jensen found in his study that male college students become more interested in the social service area during their college careers.

Data and Method

One of the purposes of this thesis was to determine if there was a difference between missionaries and non-missionaries in vocational interest. The writer based this particular part of the study upon the hypothesis that missionaries prefer a vocational interest pattern which includes the persuasive, the literary, and the social service areas more often than do non-missionaries.

The total one hundred and eight subjects in each of the missionary and non-missionary groups were included in this study also. Raw scores of the Persuasive Scale, Literary Scale, and Social Service Scale were obtained for each subject from the score sheets of the Kuder Preference Record taken when entering Brigham Young University. Mean scores of each scale for each group were computed. In order to determine the difference between the missionaries and non-missionaries on each of the mean scores computed for the three scales the

⁴²Vern H. Jensen, "A Study of Certain Factors Influencing Changes in Vocational Interests of Male College Students" (unpublished Master's thesis, Dept. of Philosophy of Education and Guidance, Brigham Young University, 1949), p. 108.

t-ratio method was employed.

Results and Explanation

There was no significant difference found between the missionaries and non-missionaries on any one of the three scales. Results are tabulated in the next table.

TABLE 10

ANALYSIS OF DIFFERENCE BETWEEN THE MEANS OF
MISSIONARIES AND NON-MISSIONARIES IN
THREE SCALES OF THE KUDER
PREFERENCE RECORD

Scales	Mean of Missionaries	N	Mean of Non- Missionaries	N	t	P
Persuasive	40.03	108	37.81	108	1.15	<.3
Literary	17.74	108	20.19	108	1.50	<.2
Social Serv.	40.45	108	38.08	108	1.22	<.3

On the Persuasive Scale the mean of the missionaries was 40.03, while the mean of the non-missionaries was 37.81. There was no significant difference. The mean of the missionaries on the Literary Scale was 17.74, while 20.19 was the mean of the non-missionaries. This showed no significant difference either. On the Social Service Scale the mean of the missionaries was 40.45, while the mean of the non-missionaries was 38.08. There was no significant difference between these means.

Conclusions

1. There is no significant difference between missionaries and non-missionaries in the Persuasive Scale of the Kuder Preference Record as to test scores upon entrance into Brigham Young University.

2. There is no significant difference between missionaries and non-missionaries in the Literary Scale of the Kuder Preference Record as to test scores upon entrance into Brigham Young University.

3. There is no significant difference between missionaries and non-missionaries in the Social Service Scale of the Kuder Preference Record as to test scores upon entrance into Brigham Young University.

4. This evidence does not support or refute the hypothesis that missionaries more often prefer a vocational interest pattern which includes the persuasive, the literary, and the social service areas than do non-missionaries. It appears that one group may select this particular interest pattern as often as the other group.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND SUGGESTIONS

Summary

All Freshmen upon entrance into Brigham Young University are required to take a battery of tests. Prior to September, 1957, The American Council on Education Psychological Examination was the test administered to measure scholastic aptitude. Since the Autumn quarter of 1946 the Kuder Preference Record has been administered to ascertain the interest patterns of the entering Freshmen. The results of these tests are filed in an individual folder for each student. Individual folders are filed and maintained in the Counseling Service. At the end of each quarter a grade slip is issued to the student as a measure of academic achievement for his quarter's work. A copy of each grade slip is inserted in his individual folder, which is filed in the Counseling Service Offices. Current grade-point averages are available in the Scholarship and Financial Aids Office.

For purposes of this study, the following data were gathered: (1) the Quantitative, Linguistic, and Total ACE raw scores, (2) grade-point averages for the first two quarters in college and for the first two quarters of 1957-58, and (3) raw scores for the Persuasive Scale, the Literary

Scale, and the Social Service Scale of the Kuder Preference Record.

Subjects for the study were full-time male Juniors of the Autumn 1957 registration. One hundred and eight missionaries of a non-veteran status, who had a complete set of data available, comprised the experimental group. The control group, equal in number to the experimental group, was composed of non-missionaries of a non-veteran status.

Mean scores were computed on the data gathered. The t-ratio method was employed to determine the differences in scholastic aptitude, academic achievement, and vocational interest.

Conclusions

The statement was made in Chapter I that this study had a dual purpose: (1) that of determining whether there is a difference in missionaries' academic achievement before and after their missionary experience; and (2) that of determining the difference, if any, between missionaries and non-missionaries in scholastic aptitude, academic achievement, and vocational interest. The writer sought to answer four specific questions in connection with the dual purpose.

Question number one, Chapter I, page 2, dealt with the academic achievement of missionaries before and after their missionary experience. Two t-tests were made: First, it was found that there was no difference in academic achievement for missionaries before and after the missionary experience.

Second, a comparison t-test was made with the non-missionaries on an equivalent time interval and it was found also that there was no significant difference in this group. In connection with this question two tables show the median grade-point for the male students by class for 1955-56 and for the missionary group and non-missionary group in this study. The data in the two tables indicate that the missionaries have a higher grade-point median both before and after the missionary experience than the male Junior students of 1955-56 or the non-missionaries with which this study deals. As an additional control a t-test was made for comparison between a group of veterans of non-missionary status and a group of missionaries of non-veteran status; and, it was learned that there was no significant difference between the two groups with regard to grade-point average.

Question number two, Chapter I, page 3, was concerned with the difference between missionaries and non-missionaries in the area of scholastic aptitude. This material was treated in Chapter III. There was no significant difference found between the two groups. It would appear that the ability to learn is fairly well matched between missionaries and non-missionaries.

The third question, page 3, was an inquiry into the difference between missionaries and non-missionaries in grade-point averages. Three comparisons were made for this purpose: (1) It was found that missionaries made a higher grade-point average on their first two quarters' work in college than did

non-missionaries. (2) The second comparison showed that missionaries made a higher grade-point average on their first two quarters' work for 1957-58 than did non-missionaries. (3) It was found that missionaries achieved higher scholastically in academic achievement than did non-missionaries. Results of these t-tests support the hypothesis that missionaries achieve higher scholastically than do non-missionaries.

The question which was listed as number four in Chapter I, page 3, concerning the difference between missionaries and non-missionaries in vocational interest was treated in Chapter V. The writer hypothesized that missionaries would more often prefer a vocational interest pattern which includes the persuasive, the literary, and the social service areas than would non-missionaries. According to the analysis made, there was no difference found between the missionaries and non-missionaries in this interest pattern. It appears that one group would select this particular pattern as often as the other group.

Suggestions for Future Study

From this study, which was concerned with scholastic aptitude, academic achievement, and vocational interest differences between missionaries and non-missionaries, the writer learned that there were other problems which could be pursued. Some of the suggestions which bear more significance are listed below:

1. A similar study, concerned with the same purposes but over a longer period of time and with a larger sampling,

may show more or fewer differences than the original study.

2. It is suggested that a similar study be conducted but with two other factors involved. The addition of a personality test, such as the Minnesota Multiphasic Personality Inventory, may reflect items which would help to account for the differences in academic achievement. A survey of the socio-economic background of the subjects may help to account for the differences in academic achievement.

3. A retest on the Kuder Preference Record after the missionary experience may reveal a heightened interest in the area of social service.

4. It is suggested that a similar study be made, but include a third group composed of subjects with experience in both the mission field and Armed Forces. The results may show the influence on achievement with both experiences involved which this study did not attempt to show.

5. A similar study, concerned with the same purposes but with more controls, would more adequately assure measuring what was intended to be measured.

6. A comparative study, concerned with the same purposes, of missionaries who have served abroad with missionaries who have served in the United States may reveal interesting differences.

7. It is suggested that a similar study be conducted, but with female missionaries and female non-missionaries as the subjects.

8. A study, similar in purposes but with a comparison

of female missionaries and male missionaries, may reveal interesting differences.

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A COMPARATIVE STUDY OF LATTER-DAY SAINT MISSIONARIES
AND NON-MISSIONARIES IN SCHOLASTIC APTITUDE,
ACADEMIC ACHIEVEMENT, AND
VOCATIONAL INTEREST

An Abstract
of a Thesis Presented to
The Department of Educational
Research and Services
of
Brigham Young University

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Inez S. Searle
July, 1958

ABSTRACT

The purpose of this study was twofold: (1) to determine if there is a difference between the returned missionaries' academic achievement before and after their missionary experience; and (2) to determine if there is a difference between returned missionaries and non-missionaries in scholastic aptitude, academic achievement, and vocational interest.

Prior to 1957, each freshman, upon entering Brigham Young University, was required to take the American Council on Education Psychological Examination (ACE). The total raw score of the ACE was used to measure scholastic aptitude. The grade-point average was the criterion selected to measure academic achievement. Grade-point averages for the first two quarters enrolled in college and for the first two quarters of 1957-58 were obtained for each subject. Since the Autumn Quarter of 1946, the Kuder Preference Record has been administered to all entering freshmen at Brigham Young University. Raw scores of the Persuasive, the Literary, and the Social Service Scales of the Kuder Interest Inventory were employed as the measure of vocational interest.

The subjects for the study were selected from the Autumn, 1957, Junior, male students' roster at Brigham Young University. The total number available for the experimental

group was one hundred and eight missionaries of non-veteran status, who had completed at least two quarters of college before going on a mission. The control group was composed of an equal number of non-missionaries of non-veteran status. Twenty-six veterans of non-missionary status, who had at least two quarters of college before going into the Services, were used as an additional control group. Male students of the Junior class were used so that the missionaries' college experience would be equivalent to that of non-missionaries.

Mean scores were computed for (1) the Total ACE raw score for each group; (2) the grade-point average for each group which includes the total grade-point average, the grade-point average for each group for the first two quarters in college, and the grade-point average for each group for the first two quarters of 1957-58; and (3) the Persuasive, the Literary, and the Social Service Scales of the Kuder Preference Record. The difference between mean scores on each of the foregoing was tested by use of the t-ratio method.

Four specific questions in relation to the dual purpose were answered. The subject of the questions and the conclusions drawn from the results of the statistical computations are presented.

Question number one dealt with the academic achievement of missionaries before and after their missionary experience. The analysis of the data showed there was no significant difference between the missionaries' grade-point average before and after their mission experience. No attempt was made to

answer why no difference was found.

The second question was concerned with the difference between missionaries and non-missionaries in scholastic aptitude. No significant difference was found between the two groups in scholastic aptitude.

Question number three was an inquiry into the difference between missionaries and non-missionaries with regard to academic achievement. Missionaries of non-veteran status achieved higher scholastic grades than did non-missionaries of non-veteran status both before and after the mission experience. In a small control group there was no significant difference between missionary non-veterans and veteran non-missionaries in academic achievement.

The fourth question was concerned with the difference between missionaries and non-missionaries in a vocational interest pattern comprised of the persuasive, the literary, and the social service areas. There was no significant difference found between the two groups in this interest pattern.

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