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PERSONAL CHARACTERISTICS OF SUCCESSFUL BUSINESS DATA PROCESSING STUDENTS

By

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1963

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
MASTER OF SCIENCE
July, 1981

PERSONAL CHARACTERISTICS

OF SUCCESSFUL BUSINESS

DATA PROCESSING

STUDENTS

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ACKNOWLEDGMENTS

This thesis was the final step in the process of completing the requirements for a Masters Degree in Occupational and Adult Education at Oklahoma State University. The most important part of the process was the classwork. It has been a pleasure to study under the guidance of the Technical Education faculty. Their pragmatic methods, coupled with their own experience in technical educaiton, made classtime productive. This writer has benefited personally and professionally from the learning experience.

Special thanks, also, to my wife, Charlotte, and my children, Davis and Anna Lee, for their help and support during the several years that it took to complete this program.

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CHAPTER I

INTRODUCTION

Background Information

The demand for computer programmers has far exceeded the supply for the last 20 years. Schools have been pushed to supply trained programmers. They have been occupied with the usual problems of inadequate equipment, locating people with enough knowledge in the new field to qualify as instructors, determining the needs of industry, and coping with the large number of students who came to the schools hoping to be trained for careers as programmers.

The environment of data processing has been unstable. Waves of technological change have coursed through it with ever-increasing intensity, battering, even destroying structures built in the past. Data processing professionals are constantly rebuilding and reworking their constructs in an effort to find solid footing on which to build a philosophy and definition of data processing that will endure. Perhaps the definition is now beginning to emerge. The literature of the last five years has more consistently identified a single body of knowledge and skills that could be considered necessary for pursuit of a career in data processing. As the requisite skills are becoming better defined, educators are increasingly charged with the responsibility for developing accurate means of determining whether or not individual students have the personal characteristics necessary to be successful in the

study of data processing.

Statement of the Problem

The problem is that no one has, as yet, been able to perfect a method of identifying students who will succeed in the study of Business Data Processing.

Purpose of the Study

The purpose of this study was to attempt to find some common personality characteristics among currently successful Business Data Processing students which might be used to predict the success of future students. This study focused on the personality characteristics measured by the FIRO-B personality test.

Research Questions

The questions addressed by this study dealt with the personality characteristics of successful Business Data Processing student that might be identified by the FIRO-B personality test. Specific questions were as follows:

1. Could the FIRO-B personality test identify a personality profile for a successful student in Business Data Processing at Oklahoma State Tech?
2. Could the FIRO-B personality test isolate any one personality characteristic that was common to successful Business Data Processing students at Oklahoma State Tech?

Hypotheses

There is a significant difference in some or all of the following characteristics in successful and non-successful Business Data Processing students at Oklahoma State Tech:

1. The need to establish and maintain satisfactory relationships and interaction with people and to be included in their activities (called "wanted inclusion" and "expressed inclusion" on the FIRO-B scale).
2. The interpersonal need for control and participation in the decision-making process (called "wanted control" and "expressed control" on the FIRO-B scale).
3. The need for love and affection (called "expressed affection" and "wanted affection" on the FIRO-B scale).

CHAPTER II

REVIEW OF LITERATURE

Identification of the Need

Current literature indicates that the search is still on for a relevant means of determining whether or not potential students will succeed in school. In his article on "A Model-Based Prediction of Scholastic Achievement," Misanchuk (1) states,

> A Sampling of recent efforts in predicting academic performance indicates that the range of predictors used (and therefore, presumably deemed by the investigators to bear relationships to academic performance) is broad, ranging from high school achievement, through both motivation and nonmotivational personality variables, to previous experience with subject matter, the high school attended, and the high school quarter in which graduation occurred. However, there does not appear to be any systematic underlying theory or rational to guide the selection of the various predictors (p. 30).

In a study titled, "Self Made Predictions of Academic Success," Stock and Schmid (2, p. 75) conclude, "In total, the results from this sample (the study) disconfirm the use of self-made predictions in a conventional selection procedure."

In the specific area of predicting success in data processing, Bloom (3, p. 39) tested a test for programming applicants; ". . . a standard test supplied by a major mainframe manufacturer." He rejected the test after it failed to meet his confidence criterion of a minimum coefficient of correlation to actual success of 0.7.

These citations may be a bit discouraging. However, they do point

up the obvious need for more reliable predictors of academic success, both general predictors and specifically discriminating predictors of success in the study of Business Data Processing.

Results of Previous Research

There have also been some moderately successful efforts to identify common characteristics in students who succeed in various programs of study. Some of these projects have been in the specific area of predicting success in the study of Business Data Processing.

There have been some very interesting results produced by educator's efforts to identify predictors of academic success. For example, Thomas J. Russo and Keith T. Checketts (4) studied three sets of ordered variables and their relationship to freshman college students' American College Testing Program (ACT) scores. A high ACT score was considered "success." The three types of variables that were investigated are generally described as school-related variables, student-related variables, and family-related variables. Of the various characteristics measured, they found that the number of academic courses that students had taken and the students' aspirations to get more education were the characteristics most significantly correlated to students' ACT scores. It is interesting that one quantitative factor and one qualitative factor emerged as most significant.

In a report on a study which looked at non-intellective factors of success, Ramon Henson (5, p. 41) states that " . . . aptitude tests . . . as the primary predictors . . . have reached an asymtote of around 0.50." On checking the relationships of self-esteem, internal-external control, and dogmatism to the students' ability to reach their educational goals

(called the Expectancy-Effort Correlation), Henson found that the relationships did influence students' academic success. He recommended further study to improve evaluation of the factors' influence on success.

In the area of success in a Vo-Tech school environment, Williams (6) examined "persisting" and "non-persisting" students by means of a questionnaire designed to differentiate between the two groups. He found the questionaire to be very discrete in its identification of persisters and "non-persisters."

On examining the ACT scores of students in the Data Processing program at three Oklahoma junior colleges, Spradley (7) found that a student's scores in English and Math were the most significant predictors of success in the study of Business Data Processing. However, neither score was a markedly reliable predictor of success.

The methods used by other investigators do not indicate that one particular approach to evaluating determinants of success is necessarily the "best" approach. Rather, it is apparent that, in each study, a method must be selected which best lends itself to the situation. A "best" method for predicting success in the study of Business Data Processing has apparently not yet been found.

Summary

In most of the reserach, two opinions appear to prevail. One opinion is that the variables which affect academic success have not been adequately identified. There is certainly a need for more research.

The second opinion is that some form of statistical analysis is usually the best way to evaluate research data. It is apparently

assumed that statistical methods produce more consistent summaries and make it easier to compare the outcomes of similar studies.

CHAPTER III

METHODOLOGY

Definitions

Specific meaning is assigned to the following terms as they are used in this study:

Success - Ranking in the upper third of the students in the second, third, fourth, or fifth trimester of study of Business Data Processing at Oklahoma State Tech.

Non-success - Ranking in the lower third of the students in the second, third, fourth, or fifth trimester of study of Business Data Processing at Oklahoma State Tech.

FIRO-B - An evaluation questionnaire compiled according to the theory ". . . that all human interaction may be divided into three categories: issues surrounding inclusion, issues surrounding control, and issues surrounding affection" (8, p. 5). (See Appendix B - A Sample FIRO-B Questionnaire.)

Assumptions

The following assumptions were made in this study:

1. Students in the upper third of their class in the second, third, fourth, and fifth trimesters of study of Business Data Processing at Oklahoma State Tech are a valid "success" group for the purposes of this study.

2. Students in the lower third of their class in the second, third, fourth, and fifth trimesters of study of Business Data Processing at Oklahoma State Tech are a valid "non-success" group for the purposes of this study.
3. An individual student's group development characteristics, as measured by the FIRO-B test, will indicate whether or not the student is a "success" in the study of Business Data Processing at Oklahoma State Tech.
4. Extracting the middle third of the students from the data set will better emphasize differences between the upper third of "successes" and the lower third of "non-successes."

Selection of the Subjects

The study was carried out at Oklahoma State Tech in Okmulgee, Oklahoma in the Spring of 1981. An effort was made to include all Business Data Processing students in the second, third, fourth, and fifth trimesters of study in the sample. Ten percent of the responses were lost due to student absences on the day the survey was taken and due to unusable responses on the FIRO-B questionnaires.

The grade point averages (GPA's) of the students making usable responses were listed in a sequential array and were divided into thirds in order of magnitude. If duplicate grades occurred at the boundary of the upper or lower third of the set, all of the duplicates were included in the same part of the set. The result was 22 students in the upper third of the group and 20 students in the lower third.

Selection of the Instrument

The FIRO-B test was developed to measure ". . . a person's characteristic behavior toward other people in the area of inclusion, control, and affection" (9, p. 5). The basic idea behind the FIRO-B is that a group, and the individuals in it, pass through three phases in each group experience. One is first included or chosen to be included in a group experience. After one has been included in the experience, one attempts to gain some control of the situation. When one feels that the situation is adequately controlled, one tends to develop close relations, or affections, with other members of the group.

At the personal level, FIRO-B measures "inclusion" as ". . . the degree to which a person associates with others" (9, p. 5). It measures "control" as ". . . the extent to which a person assumes responsibility, makes decisions, or dominates people" (9, p. 5). It measures "affection" as ". . . the degree to which a person becomes emotionally involved with others" (9, p. 5).

The test offers subjects a choice of responses to each question. A response is counted as "1" or "0", depending upon the general type of response received.

The FIRO-B was chosen as a measuring instrument to test the hypothesis that there are some differences in the measured group dynamics of the "successes" and the "non-successes."

Collection of the Data

The standard FIRO-B questionnaire was administered personally to small groups of students throughout one school day.

Analysis of the Data

The FIRO-B test produces six behavior measuring scores: expressed inclusion, wanted inclusion, expressed control, wanted control, expressed affection, and wanted affection. Expressed behavior is overt behavior by the sujbect. Wanted behavior is behavior that the subject wants from other people.

The subjects' responses were analyzed on the assumption that there would be significant differences between the two groups' responses in at least some of the six response areas.

In the response area of expressed inclusion, the responses of the "successes" and the responses of the "non-successes" were considered as two different groups. The null hypothesis was used to test the assumption that the two groups were not from the same set. The same assumption was tested in each of the other five response areas.

After the statistical analysis was completed, the responses were also judged subjectively.

The following limitations should be considered in interpreting the results of this study:

1. This research indicates that use of the FIRO-B test to try to identify unique characteristics in students who "succeed" in the study of Business Data Processing may be a "wildcat" exploration. If so, it would be very unlikely that definitive results would come of this first effort.
2. The number of students enrolled in Business Data Processing at Oklahoma State Tech is somewhat limited. The upper third was a group of 22 students, and the lower third contained 20 students. Although these are not prohibitively small samples,

they do require further research to verify any apparent patterns that might be identified in this study.

3. The null hypothesis is a simplified test and is often subject to biased interpretation of its middle range values.
4. Very few of the students had a GPA of less than 2.0. The classification of the lower third of the group surveyed as "non-successful" is somewhat arbitrary. (See Appendix A - Sequential Array of Participants' Grade Point Averages.)

CHAPTER IV

RESULTS

Return Rates

An effort was made to obtain a completed FIRO-B evaluation from every student in the second, third, fourth, and fifth trimesters of study of Business Data Processing at Oklahoma State Tech. There were 70 students enrolled. Nine students were absent. Two questionnaires were void due to students' accidental omission of answers to questions on the evaluation form. One questionnaire was rejected because the pattern of responses indicated that the student did not understand the instructions for filling out the questionnaire. The remaining 58 responses were used in the analysis.

Data Summary

The following figures summarize the responses received from the upper third and lower third of the respondents in each of the six areas of interaction measured by the FIRO-B questionnaire.

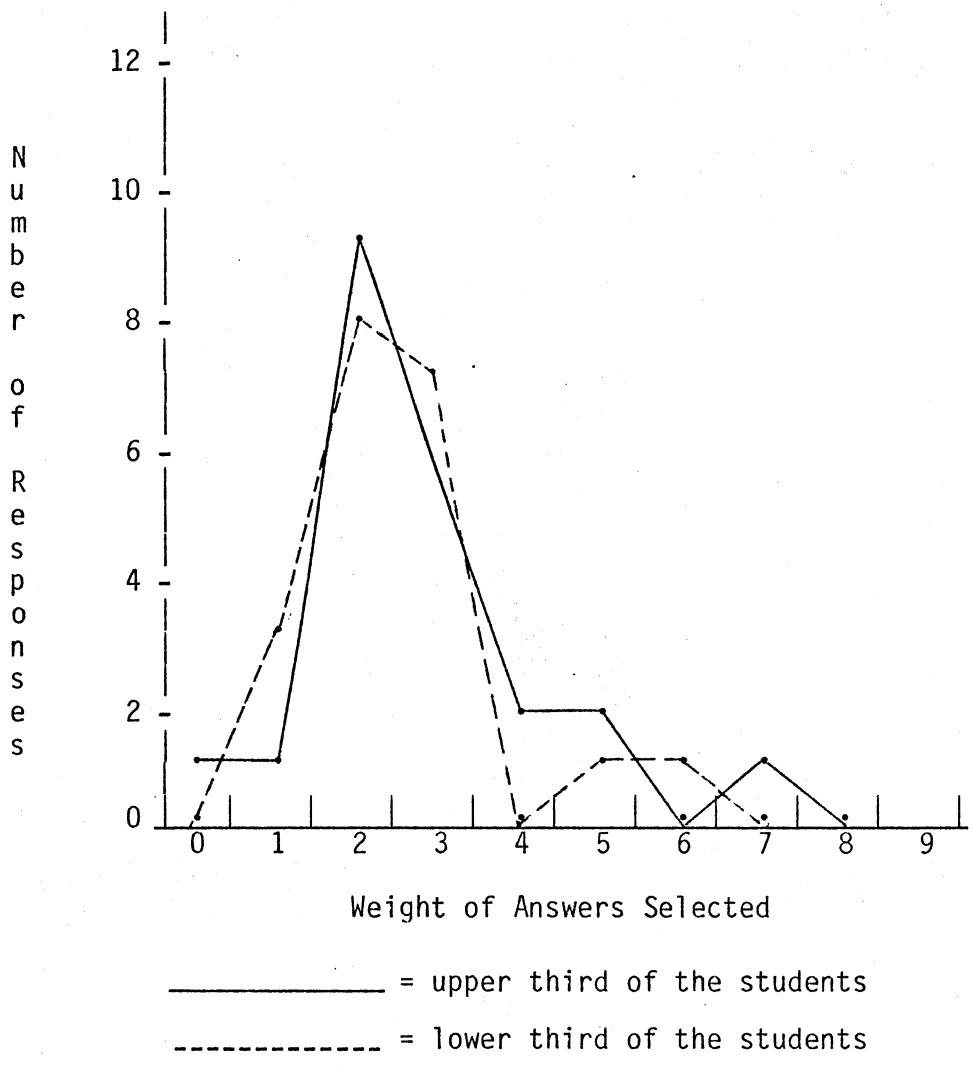
Results of the Analysis

Following are tests of the survey findings using the test of the null hypothesis.

Symbols used have the following meanings:

Data Summary 1-A

Expressed Inclusion

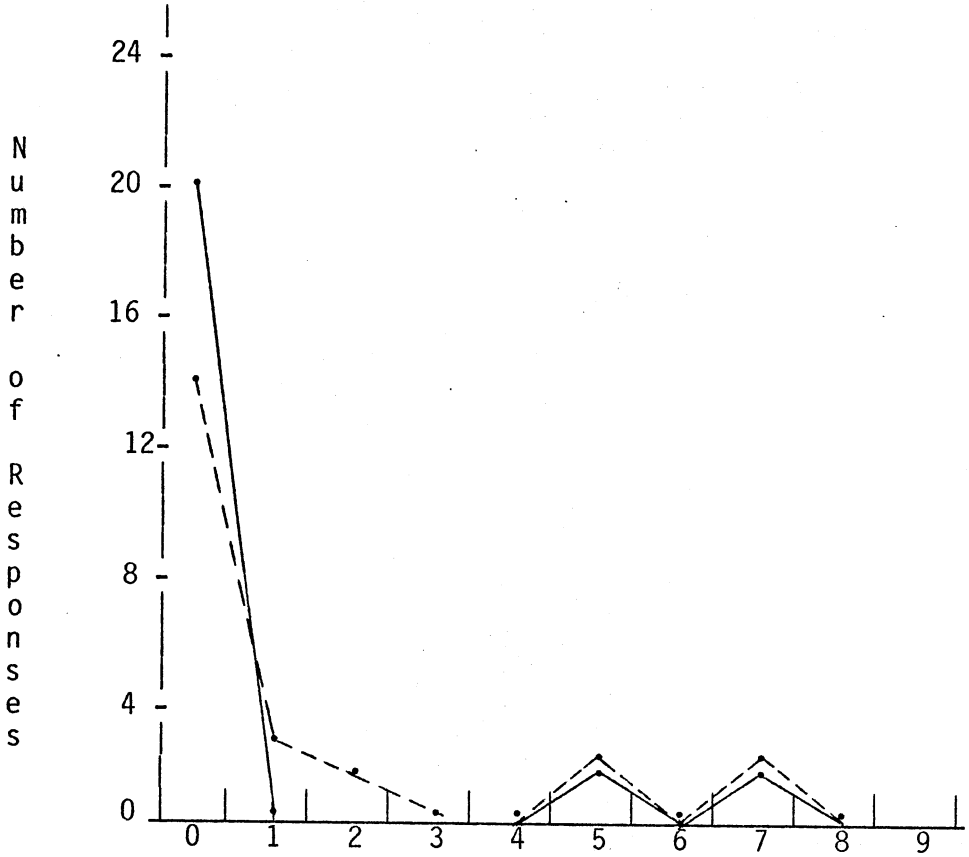


Summary: This chart indicates that the patterns of the responses to questions on Expressed Inclusion were very similar in both groups.

Figure 1. Responses of the Students to Questions Measuring Expressed Inclusion

Data Summary 1-B

Wanted Inclusion

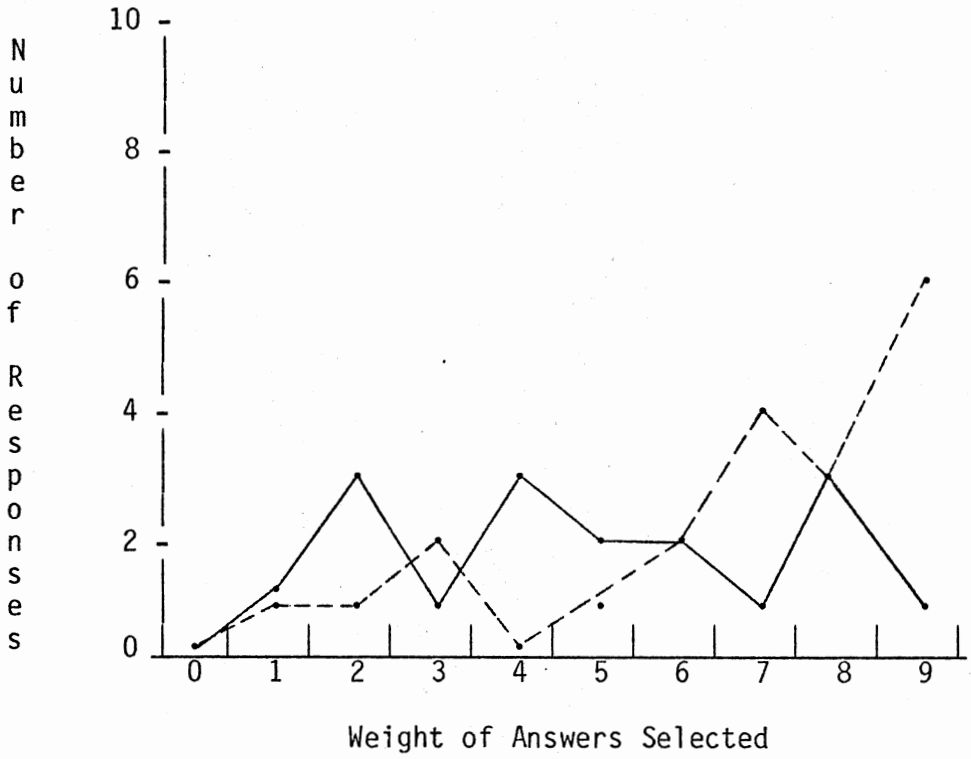


Summary: This chart indicates that the patterns of the responses to questions on Wanted Inclusion were very similar in both groups.

Figure 2. Responses of the Students to Questions Measuring Wanted Inclusion

Date Summary 2-A

Expressed Control

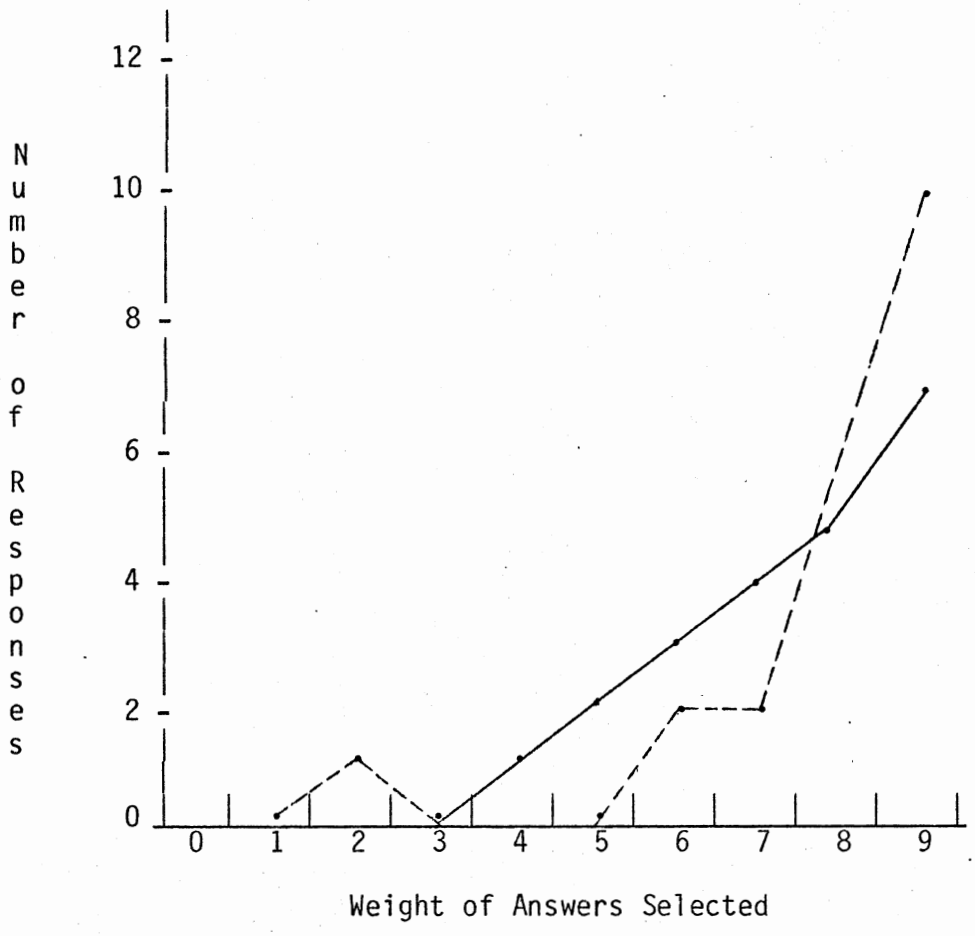


Summary: This chart indicates that the lower third of the students felt that they needed to have more control of their environment.

Figure 3. Responses of the Students to Questions Measuring Expressed Control

Data Summary 2-B

Wanted Control

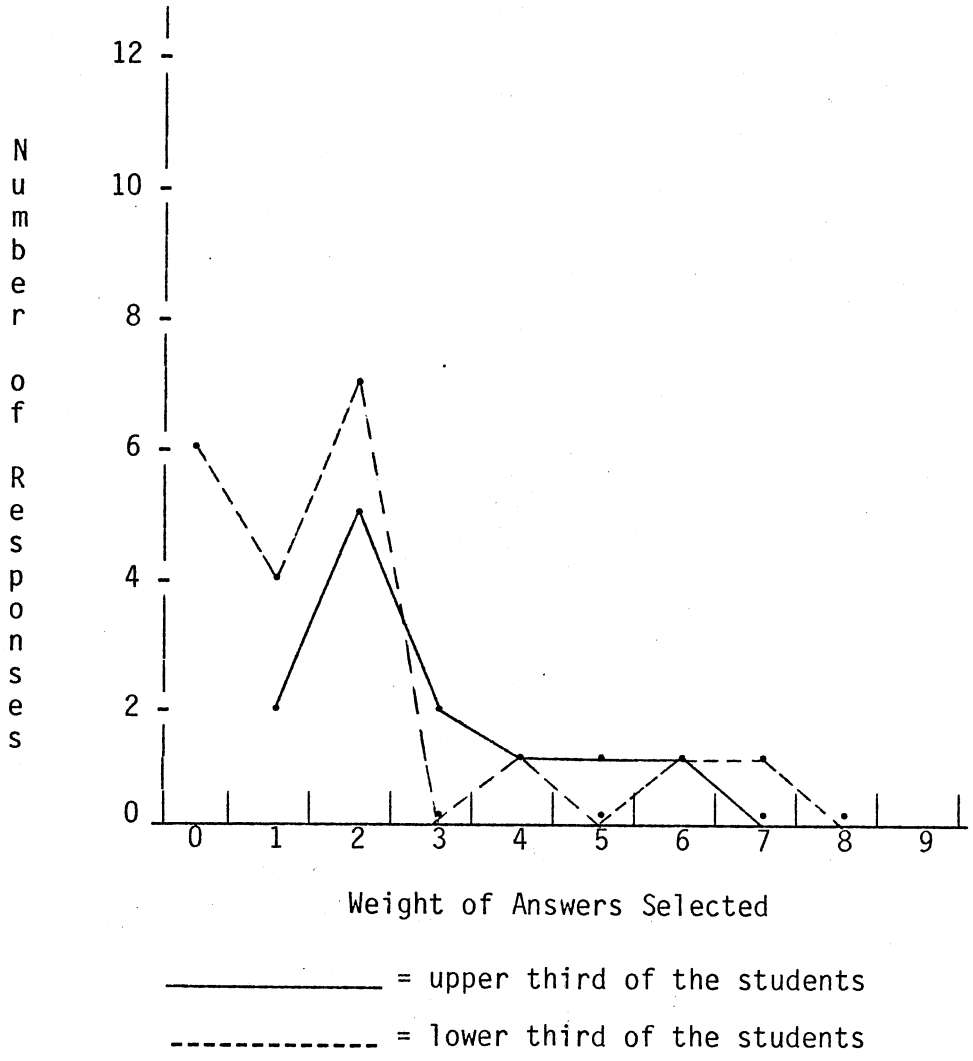


Summary: This chart indicates that the lower third of the students felt that someone else needed to exert more control over the students' environment.

Figure 4. Responses of the Students to Questions Measuring Wanted Control

Data Summary 3-A

Expressed Affection

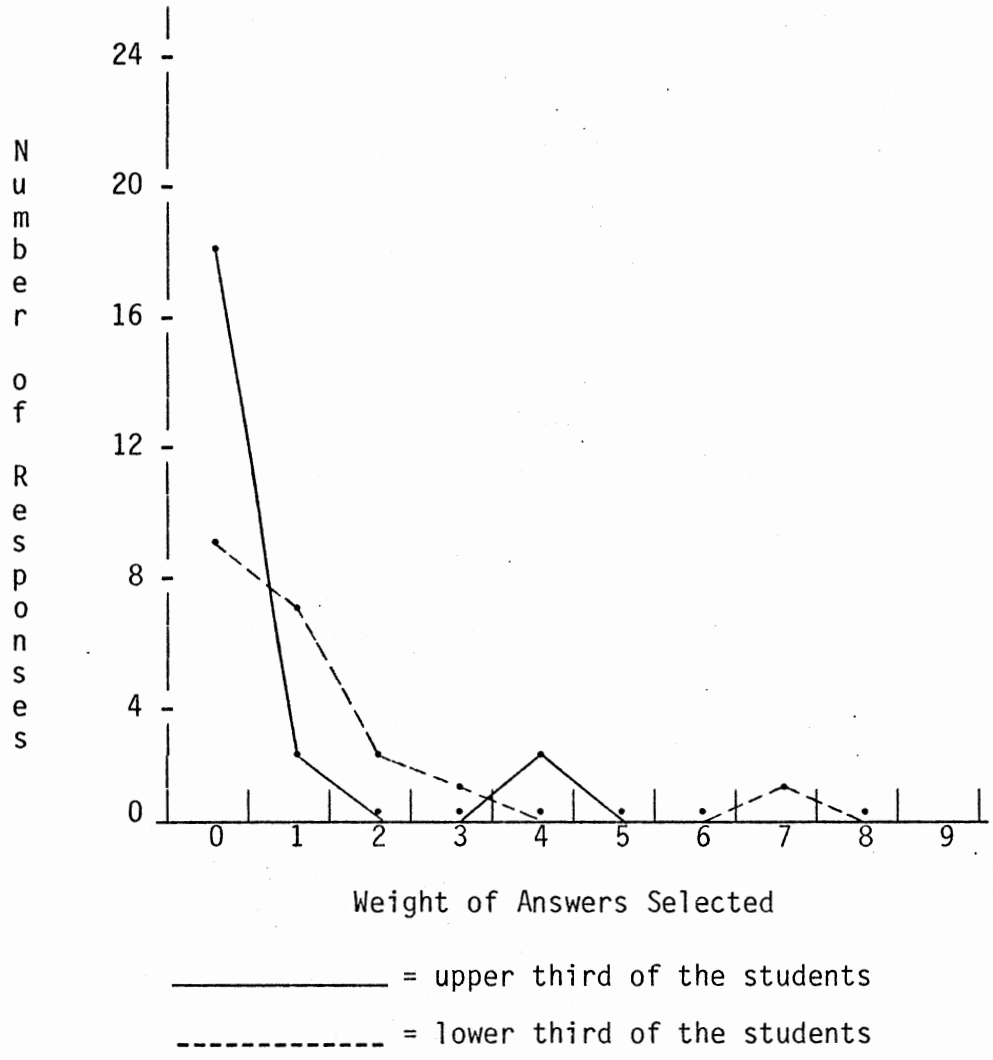


Summary: This chart indicates that the patterns of the reponses to questions on Expressed Affection were similar in both groups.

Figure 5. Responses of the Students to Questions Measuring Expressed Affection

Data Summary 3-B

Wanted Affection



Summary: This chart indicates that the patterns of the responses to questions on Wanted Affection were similar. However, the upper third of the students appear to be slgihtly more independent.

Figure 6. Responses of the Students to Questions Measuring Wanted Affection

Results of the Analysis

Following are tests of the survey findings using the test of the null hypothesis.

Symbols used have the following meanings:

$\bar{\chi}$ is the sample mean.

σ is the standard deviation of the sample.

CR is the critical ratio.

$\eta 1$ is the number of subjects in the upper third of the students tested.

$\eta 2$ is the number of students in the lower third of the students tested.

EI is Expressed Inclusion

WI is Wanted Inclusion

EC is Expressed Control

WC is Wanted Control

EA is Expressed Affection

WA is Wanted Affection

Hypothesis 1-A

The mean of the expressed inclusion of the upper one-third of the students is significantly different from the mean of the expressed inclusion of the lower one-third of the students.

$\bar{\chi}$ EI upper 1/3 = 2.82 $\bar{\chi}$ EI lower 1/3 = 2.55

σ EI upper 1/3 = 1.50 σ EI lower 1/3 = 1.23

$$\sigma(\bar{\chi}1 - \bar{\chi}2) = -\sqrt{\frac{\sigma 1^2}{\eta 1} + \frac{\sigma 2^2}{\eta 2}} = -\sqrt{\frac{(1.50)^2}{22} + \frac{(1.23)^2}{20}}$$

$$= -\sqrt{0.102 + 0.076} = -\sqrt{0.178} = .42$$

$$CR = \frac{\bar{\chi}1 - \bar{\chi}2}{\sigma(\chi_1 - \chi_2)} = \frac{0.27}{0.42} = 0.64$$

0.64 is significant at the 48% level.

Hypothesis 1-B

The mean of the wanted inclusion of the upper one-third of the students is significantly different from the mean of the wanted inclusion of the lower one-third of the students.

$\bar{\chi}$ WI upper one-third = .55 $\bar{\chi}$ WI lower one-third = .80

σ WI upper one-third = 1.79 σ WI lower one-third = 1.88

$$\sigma(\bar{\chi}1 - \bar{\chi}2) = -\sqrt{\frac{\sigma 1^2}{n1} + \frac{\sigma 2^2}{n2}} = -\sqrt{\frac{(1.79)^2}{22} + \frac{(1.88)^2}{20}}$$

$$= -\sqrt{0.146 + 0.176} = -\sqrt{0.322} = 0.57$$

$$CR = \frac{\bar{\chi}1 - \bar{\chi}2}{\sigma(\chi^1 - \chi^2)} = \frac{0.55 - 0.80}{0.57} = \frac{-0.25}{0.57} = -0.44$$

0.44 is significant at the 34% level.

Hypothesis 2-A

The mean of the expressed control of the upper one-third of the students is significantly different from the mean of the expressed control of the lower one-third of the students.

$\bar{\chi}$ EC upper one-third = 5.86 $\bar{\chi}$ EC lower one-third = 6.60

σ EC upper one-third = 2.78 σ EC lower one-third = 2.37

$$\sigma(\bar{\chi}1 - \bar{\chi}2) = -\sqrt{\frac{\sigma 1^2}{n1} + \frac{\sigma 2^2}{n2}} = -\sqrt{\frac{(2.78)^2}{22} + \frac{(2.37)^2}{20}}$$

$$= -\sqrt{0.351 + 0.281} = -\sqrt{0.632} = 0.79$$

$$CR = \frac{\bar{\chi}1 - \bar{\chi}2}{\sigma(\chi 1 - \chi 2)} = \frac{5.86 - 6.60}{0.79} = \frac{-0.74}{0.79} = 0.94$$

0.94 is significant at the 66% level.

Hypothesis 2-B

The mean of the wanted control of the upper one-third of the students is significantly different from the mean of the wanted control of the lower one-third of the students.

$\bar{\chi}$ WC upper one-third = 7.41 $\bar{\chi}$ WC lower one-third = 7.90

σ WC upper one-third = 1.53 σ WC lower one-third = 1.71

$$\sigma(\bar{\chi}1 - \bar{\chi}2) = -\sqrt{\frac{\sigma 1^2}{n1} + \frac{\sigma 2^2}{n2}} = -\sqrt{\frac{(1.53)^2}{22} + \frac{(1.71)^2}{20}}$$

$$= -\sqrt{0.106 + 0.146} = -\sqrt{0.252} = 0.50$$

$$CR = \frac{\bar{\chi}1 - \bar{\chi}2}{\sigma(\chi 1 - \chi 2)} = \frac{7.41 - 7.90}{0.50} = \frac{-0.59}{0.50} = 1.18$$

1.18 is significant at the 76% level.

Hypothesis 3-A

The mean of the expressed affection of the upper one-third of the students is significantly different from the mean of the expressed affection of the lower one-third of the students.

$\bar{\chi}$ EA upper one-third = 1.50 $\bar{\chi}$ EA lower one-third = 1.75

σ EA upper one-third = 1.79 σ EA lower one-third = 1.94

$$\sigma(\bar{\chi}^1 - \bar{\chi}^2) = -\sqrt{\frac{\sigma 1^2}{n1} + \frac{\sigma 2^2}{n2}} = -\sqrt{\frac{(1.79)^2}{22} + \frac{(1.94)^2}{20}}$$

$$= -\sqrt{0.146 + 0.188} = -\sqrt{0.334} = 0.578$$

$$CR = \frac{\bar{\chi}^1 - \bar{\chi}^2}{\sigma(\chi^1 - \chi^2)} = \frac{1.50 - 1.75}{0.578} = 0.43$$

0.43 is significant at the 33% level.

Hypothesis 3-B

The mean of the wanted affection of the upper one-third of the students is significantly different from the mean of the wanted affection of the lower one-third of the students.

$\bar{\chi}$ WA upper one-third = .45 $\bar{\chi}$ WA lower one-third = .90

σ WA upper one-third = 1.18 σ WA lower one-third = 1.68

$$\sigma(\bar{\chi}^1 - \bar{\chi}^2) = -\sqrt{\frac{\sigma 1^2}{n1} + \frac{\sigma 2^2}{n2}} = -\sqrt{\frac{(1.18)^2}{22} + \frac{(1.68)^2}{20}}$$

$$= -\sqrt{0.063 + 0.141} = -\sqrt{0.204} = 0.45$$

$$CR = \frac{\bar{\chi}^1 - \bar{\chi}^2}{\sigma(\chi^1 - \chi^2)} = \frac{0.45 - 0.90}{0.45} = -1.00$$

1.00 is significant at the 64% level.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study investigates possible differences between "successes" and "non-successes" among students studying Business Data Processing at Oklahoma State Tech. The measuring instrument used is the FIRO-B questionnaire, which measures three aspects of interpersonal relationships: "inclusion," "control," and "affection."

Students in their second, third, fourth, and fifth trimesters of study were divided into three groups according to their overall grade point averages. The upper third of the students were designated as "successes" and the lower third of the students were designated as "non-successes." The middle third of the students were not included in order to provide a deliniation between the "successes" and the "non-successes."

The FIRO-B questionnaire was administered to all students. The subjects were not aware of the purpose of the study.

When the results were tallied, the null hypothesis was used to test the assumption that there was a difference between the responses of the "successes" and "non-successes" in the measured areas; wanted inclusion, expressed inclusion, wanted control, expressed control, wanted affection, and expressed affection.

Objective Conclusions

First to be considered should be the specific hypotheses involved in applying the null hypothesis test to each of the pairs of results of the FIRO-B measurements.

Hypothesis 1-A. The mean of the expressed inclusion of the upper third of the students was significantly different from the mean of the expressed inclusion of the lower third of the students.

In this test, the critical ratio was 0.64. This is significant at the 48% level. It indicates that there is not much chance that there was a significant difference in the "expressed inclusion" of the two groups.

Hypothesis 1-B. The mean of the wanted inclusion of the upper third of the students was significantly different from the mean of the wanted inclusion of the lower third of the students.

In this test, the critical ratio was 0.44. This is significant at the 34% level. It indicates that there is little chance that there is a significant difference in the "wanted inclusion" of the two groups.

Hypothesis 2-A. The mean of the "expressed control" of the upper third of the students was significantly different from the mean of the "expressed control" of the lower third of the students.

In this test, the critical ratio was 0.94. This is significant at the 66% level. This could be considered to be a borderline value. Perhaps further study would be appropriate before one presumes that there is a real difference between the two groups.

Hypothesis 2-B. The mean of the wanted control of the upper third of the students was significantly different from the mean of the wanted control of the lower third of the students.

In this test, the critical ratio was 1.18. This is significant at the 76% level. It approaches a level of significance which might justify accepting the hypothesis. The relationship should be investigated further before the hypothesis is fully accepted.

Hypothesis 3-A. The mean of the expressed affection of the upper third of the students was significantly different from the mean of the expressed affection of the lower third of the students.

In this test, the critical ratio was 0.43. This is significant at the 33% level. It indicates that there is very little chance that there is a significant difference between the two groups.

Hypothesis 3-B. The mean of the wanted affection of the upper third of the students was significantly different from the mean of the wanted affection of the lower third of the students.

In this test, the critical ratio was 1.00. This is significant at the 64% level. This is a marginal level of significance which indicates that further investigation might be done before the hypothesis is acepted or rejected.

Subjective Conclusions

1. In general, there appears to be no substantial significant difference between the "successes" and the "non-successes" in the six areas of group development characteristics measured by the FIRO-B test.
2. With the results of this study compiled, it occurs to the author that the FIRO-B might reveal more significant differences between students who completed the study of Business Data Processing at Oklahoma State Tech and students who drop out.

Such a study would require more time, two years or more, to accumulate enough data to produce significant results.

3. The similarities of the upper and lower thirds of the group tested may be more significant than their differences. Compare these summary characteristics of the Business Data Processing students to the summary characteristics of four other groups of students tested in previous studies. (See Table I.)

The five groups are not totally perfectly comparable. There would be differences between the Harvard and Radcliffe students and the Business Data Processing students at Oklahoma State Tech. And, there is an average age difference between high-school students and Oklahoma State Tech students.

However, there are some apparent marked differences between the Oklahoma State Tech students and the other groups. Notably the higher Oklahoma State Tech students' scores in the areas of "control" and the lower ones in the areas of "inclusion" and "affection". Not only are the Oklahoma State Tech students' scores in "affection" and "inclusion" lower than the other groups' scores, but the Oklahoma State Tech students' scores are more tightly grouped. This would seem to indicate that there may be significant differences between students studying Business Data Processing at Oklahoma State Tech and general population students.

An additional fact which makes the results even more interesting is that 30% to 40% of each group of students who begin studying Business Data Processing at Oklahoma State Tech drop out by the beginning of their second trimester.

The high dropout rate in the first trimester and the high GPA of the students who remain might justify the assumption, in a future study, that

TABLE I

COMPARISON OF THE SUMMARY CHARACTERISTICS OF THE BUSINESS DATA PROCESSING STUDENTS TO FOUR OTHER GROUPS OF STUDENTS TESTED IN PREVIOUS STUDIES

	Mean Values				
Scale	Group 1	Group 2	Group 3	Group 4	Group 5
Expressed Inclusion	5.5	4.6	4.9	4.1	2.66
Wanted Inclusion	5.6	5.4	4.9	4.0	.55
Expressed Control	4.1	2.9	1.9	2.7	6.29
Wanted Control	4.6	4.7	3.1	2.8	7.66
Expressed Affection	4.2	3.7	4.4	3.3	1.62
Wanted Affection	4.8	5.0	5.0	3.6	.64

	Standard Deviation				
Scale	Group 1	Group 2	Group 3	Group 4	Group 5
Expressed Inclusion	1.90	2.82	1.99	2.27	1.28
Wanted Inclusion	3.20	3.16	3.44	3.22	1.59
Expressed Control	2.61	2.47	1.81	2.28	2.47
Wanted Control	2.04	1.97	1.98	2.07	1.60
Expressed Affection	2.37	2.20	2.64	2.27	1.80
Wanted Affection	2.63	2.15	2.54	2.49	1.28

Group 1 is a group of 1012 male Harvard freshmen.

Group 2 is a group of 228 female Radcliffe freshmen.

Group 3 is a group of 1488 female high school students.

Group 4 is a group of 1395 male high school students.

Group 5 is the group of 58 Business Data Processing students tested in this study.

all students who enroll in the second and subsequent trimesters of study are "successes". There might then be a strong common FIRO-B profile for those students as contrasted with the general population of all students.

4. The low scores in the areas of "inclusion" coupled with the high scores in the areas of "control" may indicate that those individuals who progressed to the second trimester of study were the ones who were able to pass quickly through the time when they felt "included" in the activities of school and moved well into the "control" phase of their school experience by the beginning of their second trimester of study. If this were the case, the faculty might be able to retain more students by taking them through learning experiences in their first trimester which were designed to make the students feel "included" in the group and move them toward a desire to exert more "control" over their environment.

Recommendations

The results of this study indicate that there are probably not any significant differences in the personality characteristics measured by the FIRO-B test between the students in the upper and lower thirds of the students in the second, third, fourth, and fifth trimesters of study of Business Data Processing at Oklahoma State Tech.

However, as an offshoot of this study, contrasting the FIRO-B profiles of all of the students tested to the FIRO-B profiles of more general student populations indicates that the FIRO-B might provide a useful profile of the student most likely to continue beyond the first trimester of study of Business Data Processing.

This profile could possibly be defined by administering the FIRO-B test to all students who enrolled in the Business Data Processing course at Oklahoma State Tech. Later, the FIRO-B profiles of drop-outs could be compared to the profiles of students who completed the program of study. There might be some significant differences in the profiles of the two groups.

In a general study, one might test students before breaking them up into experimental groups. The groups might then be taken through learning experiences which were specifically designed to make them feel "included" in their group and motivate them to want to exert more "control" over their learning situation. Follow-up tests could be used to determine if the students' FIRO-B profiles had changed and to determine if the levels of achievement in the experimental groups were higher than the levels of achievement in the experimental control groups.

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APPENDIX A

A SEQUENTIAL ARRAY OF PARTICIPANTS' GRADE POINT AVERAGES

Upper Third	Middle Third	Lower Third
4.0	3.2	2.6
4.0	3.1	2.6
3.9	3.1	2.6
3.9	3.1	2.6
3.8	3.1	2.5
3.8	3.0	2.5
3.7	3.0	2.5
3.7	3.0	2.4
3.6	3.0	2.4
3.5	2.9	2.4
3.5	2.9	2.3
3.4	2.9	2.3
3.4	2.9	2.2
3.4	2.8	2.2
3.4	2.7	2.1
3.4	2.7	2.1
3.4		2.1
3.3		1.8
3.3		1.8
3,3		1.5
3.3		
3.3		

APPENDIX B

A SAMPLE FIRO-B QUESTIONNIARE

FIRO-B

1977 Edition

WILL SCHUTZ, Ph.D.

DIRECTIONS: This questionnaire explores the typical ways you interact with people. There are no right or wrong answers.

Sometimes people are tempted to answer questions like these in terms of what they think a person *should* do. This is *not* what is wanted here. We would like to know how you actually behave.

Some items may seem similar to others. However, each item is different so please answer each one without regard to the others. There is no time limit, but do not debate long over any item.

NAME _____

GROUP _____

DATE _____ AGE _____

MALE _____ FEMALE _____

	I	C	A	Sum (I + C + A)
e				
w				
sum (e + w)				Total Sum
diff (+ or −) (e − w)				Total Diff

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For each statement below, decide which of the following answers best applies to you. Place the number of the answer in the box at the left of the statement. Please be as honest as you can.

1. never 2. rarely 3. occasionally 4. sometimes 5. often 6. usually

☐ 1. I try to be with people.

☐ 2. I let other people decide what to do.

☐ 3. I join social groups.

☐ 4. I try to have close relationships with people.

☐ 5. I tend to join social organizations when I have an opportunity.

☐ 6. I let other people strongly influence my actions.

☐ 7. I try to be included in informal social activities.

☐ 8. I try to have close, personal relationships with people.

☐ 9. I try to include other people in my plans.

☐ 10. I let other people control my actions.

☐ 11. I try to have people around me.

☐ 12. I try to get close and personal with people.

☐ 13. When people are doing things together I tend to join them.

☐ 14. I am easily led by people.

☐ 15. I try to avoid being alone.

☐ 16. I try to participate in group activities.

For each of the next group of statements, choose one of the following answers:

1. nobody 2. one or two people 3. a few people 4. some people 5. many people 6. most people

☐ 17. I try to be friendly to people.

☐ 18. I let other people decide what to do.

☐ 19. My personal relations with people are cool and distant.

☐ 20. I let other people take charge of things.

☐ 21. I try to have close relationships with people.

☐ 22. I let other people strongly influence my actions.

☐ 23. I try to get close and personal with people.

☐ 24. I let other people control my actions.

☐ 25. I act cool and distant with people.

☐ 26. I am easily led by people.

☐ 27. I try to have close, personal relationships with people.

For each of the next group of statements, choose one of the following answers:

1. nobody 2. one or two people 3. a few people 4. some people 5. many people 6. most people

☐ 28. I like people to invite me to things.

☐ 29. I like people to act close and personal with me.

☐ 30. I try to influence strongly other people's actions.

☐ 31. I like people to invite me to join in their activities.

☐ 32. I like people to act close toward me.

☐ 33. I try to take charge of things when I am with people.

☐ 34. I like people to include me in their activities.

☐ 35. I like people to act cool and distant toward me.

☐ 36. I try to have other people do things the way I want them done.

☐ 37. I like people to ask me to participate in their discussions.

☐ 38. I like people to act friendly toward me.

☐ 39. I like people to invite me to participate in their activities.

☐ 40. I like people to act distant toward me.

For each of the next group of statements, choose one of the following answers:

1. never 2. rarely 3. occasionally 4. sometimes 5. often 6. usually

☐ 41. I try to be the dominant person when I am with people.

☐ 42. I like people to invite me to things.

☐ 43. I like people to act close toward me.

☐ 44. I try to have other people do things I want done.

☐ 45. I like people to invite me to join their activities.

☐ 46. I like people to act cool and distant toward me.

☐ 47. I try to influence strongly other people's actions.

☐ 48. I like people to include me in their activities.

☐ 49. I like people to act close and personal with me.

☐ 50. I try to take charge of things when I'm with people.

☐ 51. I like people to invite me to participate in their activities.

☐ 52. I like people to act distant toward me.

☐ 53. I try to have other people do things the way I want them done.

☐ 54. I take charge of things when I'm with people.

VITA

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