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ABSTRACT

The purpose of this study was to examine the relationship between student performance and selected learner variables, teacher variables, and variations in teaching-learning environments. Particular attention was given to the identification of learner variables associated with performance in 2 different teaching-learning environments: independent study without student-professor contact and the classroom environment involving student-professor contact in which a combination of lecture and discussion was used. Each student in introductory sociology was allowed to choose whether he would be a regular class attender or whether he would be a non-attender (self-study with attendance only for objective tests). Each of these 2 categories was subsequently divided into (1) those who had performed less well. The differences among these 4 categories on mental, demographic, and social-psychological variables were analyzed using the method of elaboration. Many differences were found between those who chose to attend and not to attend and those of each of these categories whose sociology grade was higher than their GPA. For the total sample, however, there was no significant difference between attenders and non-attenders. (Author/AF)

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Final Report

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CLASS ATTENDANCE AS A FACTOR IN THE ACADEMIC ACHIEVEMENT OF COLLEGE STUDENTS

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SUMMARY

The purpose of this research is to examine the relationship between student performance and selected learner variables, teacher variables, and variations in teaching-learning environments. Particular attention is given to the identification of learner variables associated with performance in two different teaching-learning environments--independent study without student-professor contact and the classroom environment involving student-professor contact in which a combination of lecture and discussion is used.

The procedure was to permit each student in introductory sociology to choose whether he would be a regular class attender or whether he would be a non-attender (self-study with attendance only for objective tests). Each of these two categories was subsequently dichotomized into (1) those who had performed as well or better in sociology than their grade point average, and (2) those who had performed less well. The result was four categories: attenders whose Soc percentile $\geq$ GPA percentile; attenders whose Soc percentile $<$ GPA percentile; non-attenders whose Soc percentile $\geq$ GPA percentile; non-attenders whose Soc percentile $<$ GPA percentile. The differences among these four categories on mental, demographic and social-psychological variables were analyzed using the method of elaboration.

Many differences were found between those who chose to attend and not to attend and those of each of these categories who had Soc $\geq$ GPA. The non-attenders with Soc $\geq$ GPA were found to have a number of identifiable characteristics.

However, for the total samples (602 students in the first quarter of the course and 195 in the second quarter) there was no significant difference between attenders and non-attenders. This finding, combined with those mentioned above, support the major thesis of this research: that individual differences influence the student's need for regular class attendance. To state that there is no significant difference between attenders and non-attenders is an over-simplification.

A study of the performance of attenders and non-attenders on test items classified as factual, conceptual and generalizing provided some evidence that attenders and non-attenders are engaged in different types of learning. More study of this subject is recommended.

BACKGROUND OF THE STUDY

Undergraduate colleges were established in Colonial America, beginning with Harvard, William and Mary, and Yale. They followed the British pattern, but with stronger emphasis upon Puritan rigor. Except for one or two periods designated for recreation, the college day was spent in class periods, study periods and chapel exercises. In the evenings and at other times students were expected to be in their rooms studying, and "tutors made regular rounds to guard against the devil's finding occupations for idle minds."[1]

In the eighteenth century state universities began to appear upon the scene and in the nineteenth century Land Grant Colleges. Religious influence was never strong in these secular institutions, and it has declined in the colleges which were established under church auspices. Also, in the nineteenth century the system of close regulation of students' time was challenged by influence from Continental Europe, especially from Germany. In 1886 Harvard "adopted the continental philosophy of student life in toto by announcing that attendance at classes would no longer be taken for juniors and seniors and that they would be required to pass only course examinations."[2] Under this system the student was free to do as he pleased during the college year from registration to final examination, a system somewhat similar to that currently existing in British universities.

Current practices in U.S. universities vary, showing some characteristics of both systems. This is especially evident in the requirements for undergraduate, and to some extent for graduate, degrees. The legal tender exchangeable for a degree is of two types: a certain number of units or credit hours acquired in lecture or laboratory and satisfactory performance on examinations.

College faculties appear to be divided into what may be called the Garfield School (Mark Hopkins on one end of a log and a student on the other) and the Galileo School (you cannot teach a man anything; you can only help him to find it within

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[1]John S. Brubacher and Willis Rudy, Higher Education in Transition (New York: Harper and Row, 1958), p. 81.

[2]Edward Bradby, The University Outside Europe (London: Oxford University Press, 1939), pp. 58-59.

himself).[3] If the Galileo School is correct, many millions of faculty-student hours are being wasted in the classroom. If the Garfield School is right, some current practices in colleges will result in inferior education, even though the students may pass their examinations and secure degrees.

At the present time we are faced nationally with an under supply of faculty for colleges and universities and a great increase in the number of students. The scarcity of faculty leads administrations to search for ways to eliminate waste of time and duplication of effort. At the same time, especially in the larger institutions, there is a wide-spread apprehension of growing impersonality in education (dramatized by events at Berkeley in 1964-65 and in many other institutions since). It thus appears that in 1969 we are still (or again?) engaged in the battle, begun more than a century ago, between those who minimize the importance of student-faculty contact and those who emphasize the danger of impersonality in education.

Considerable attention has been given to the basic question: Do contact hours with the professor assist in the learning process? Research bearing upon this question has been conducted at a number of institutions, including Antioch College, the University of Colorado, Miami University (Ohio), Purdue University and the University of Tennessee. For the most part the systematic studies conducted at these institutions indicate no significant difference between performance of students who attended regular classes (usually three times per week) and those who studied more independently with fewer contacts or no contact except for examinations.

Implicit in the long-continued debate over student-professor contact and in much of the research (possibly even more in the minds of those who interpret it) is the assumption that the student is a standardized person. Such an assumption is contrary to our basic knowledge of individual differences. Because of individual differences of students it may be that within a single university and in the same course, we need different plans for student-faculty contact hours. This is the assumption from which we proceed. It is similar to the position arrived at by Siegel and Siegel, but our focus is different. It is upon

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[3]The statement about Mark Hopkins originated with James A. Garfield in an address given at Williams College, 1871. Burton Stevenson, ed., The Home Book of Quotations: Classical and Modern (New York: Dodd, Mead and Co., 1956), p. 2069. The second statement is attributed to Galileo. See Jacob M. Braude, Speakers Encyclopedia of Stories, Quotations and Anecdotes (Englewood Cliffs, N. J.: Prentice-Hall, 1955), p. 133.

classroom instruction in a traditional setting.[4] If this and subsequent studies can specify which students learn equally well in certain courses with less class attendance, the result should be an improvement in the teaching process for students who need professor contact and a saving in teaching time and cost.

In summary, the purpose of our research is to examine the relationship between student performance and selected learner variables, teacher variables, and variations in teaching-learning environments. Particular attention is to be given to the identification of learner variables associated with performance in two different teaching-learning environments--independent study without student-professor contact and the classroom environment involving student-professor contact in which a combination of lecture and discussion is used.

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[4]Laurence Siegel and Lila C. Siegel, "A Multivariate Paradigm for Educational Research," Psychological Bulletin, 68:5, pp. 306-326.

METHODS OF RESEARCH

With the data collected in this study it would be possible to study a large number of different and important questions. In the interest of precision the report will be limited to the question of class attendance as a factor in student achievement in two samples of college undergraduates in introductory sociology at the University of Tennessee.

To explore the problem defined the researchers began collection of data at the University of Tennessee in the Winter Quarter, January, 1967. At the first class meeting of each of their sections of introductory sociology the students were told that at the fourth meeting they would have to decide whether they wished to be attenders or non-attenders. (See Appendix A). Details of the plan were discussed with the students as much as they wished during the first four class meetings. The attenders were expected to be present and prepared at every class unless they had an exceptionally good excuse. After the introductory week the non-attenders could not come to class (or receive any assistance from the professor) except for the two major tests, the final examination, and the two class periods discussed below.

At a class meeting one week after each of the tests both attenders and non-attenders were required to be present to learn their test grades and to supply information required on two questionnaires (Appendices B and C) and to discuss the test questions. It was felt that all students should have this much feed-back from the professor. After the first test a non-attender could change to the status of attender if he wished. Only three students availed themselves of this option--a number too small to permit statistical analysis.

A final grade based upon 30% for each of the two tests and 40% for the final examination was computed for each student at the end of the course. The grade so computed is the grade used as evidence of course performance.

The questionnaires contain items requesting demographic information and items designed to indicate social-psychological characteristics. They also contain a few items which will be used in studies other than this one.

The second questionnaire asked a number of questions calling for student evaluation of his experiences as an attender or

non-attender. This questionnaire was administered and retained by a representative of the University's Learning Research Center. The professor was not permitted to see the responses until after he had completed and turned in the grades for the course, thus contributing to frankness of response from the students. Examination of the responses after the students' grades had been recorded indicated that they had responded confidently.

Collection of data using the instruments indicated continued through May 1968, at which time we had information on approximately 800 students, 602, in the first quarter of introductory sociology and 195 in the second quarter. For some of the tables the totals are smaller than these figures because there was no information available on the item being treated. Most of the analysis relates to the larger sample of 602 subjects.

Each student's standing on ACT Test and Grade Point Average for the quarter in which he took sociology was secured from the University records and a percentile rank on each of these variables as well as his percentile rank in sociology was determined.

The three percentile scores along with all the information secured on Parts I and II of the Questionnaire (Appendices B and C) were coded and put on punch cards. The students were then divided into two categories:

a. Those whose percentile rank in sociology was equal to or above percentile rank of GPA.

b. Those whose percentile rank in sociology was below percentile rank on GPA.

To clarify relationships most of the responses to questions permitting multiple responses were reduced to two categories. For example in question 16 of Part II (Appendix C) "strongly agree" and "agree" was combined for one category, "undecided," "disagree" and "strongly disagree" for the other. Most of the data are presented in 2 x 2 contingency tables with the probability based upon a chi square (X^2) value and the strength of the relationship expressed by epsilon (e). The contingency tables were run and the chi square values computed by the University of Tennessee Computer Center.

Several variables other than those under study needed to be controlled, and controls were planned as follows:

a. Subject matter: The same textbook and assignments were used over the two year period covered by the study. The book used was: Broom, Leonard and

Philip Selznick, Sociology (Third Edition). New York: Harper and Row, 1963.

b. Tests: Only objective tests (true-false and multiple choice items) were used on the regular tests. Except for items relating to material discussed in the first four class periods, all test questions were taken from the Instructor's Manual designed for use with the text and distributed by the publishers.

c. Teaching: Only two teachers were involved in the study. They endeavored to use the same teaching methods, which were a combination of lecture and discussion. Some differences between the two professors are given in Chapter 4.

d. Discipline and level of course: The study was done only for two quarters of the introductory course and for only one discipline.

In summary, the above is the research method which was followed. Other details of the method will become clear in the following chapters which report analysis of data and findings.

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THE DECISION TO ATTEND AND RELATED FACTORS

As mentioned earlier, at the fourth meeting of the class each student was asked to sign a statement that he had decided to be an attender or a non-attender. This dichotomy is one of our basic variables. It is a dependent variable insofar as it may have been influenced by mental, demographic or social-psychological characterisitcs of the student. It is independent insofar as it may have influenced performance in the course.

In this study performance is measured in two ways, only one of which is referred to in this chapter. The measure treated here is a comparison between the percentile rank of the student in sociology and the percentile rank of his grade point average for the quarter in which he studied sociology. Thus, each student's performance in sociology is compared with his total performance, not with the performance of other students. On this basis the students are dichotomized into the categories "Students with Soc $\geq$ GPA" or Students with Soc $<$ GPA."

In most of the tables at the top of the following pages the relationship between attendance and some one mental, demographic or social-psychological factor is presented. And below this the relationship between variable attenders which is being considered and relative performance (Soc $\geq$ GPA or Soc $<$ GPA), is presented in partial tables for attenders and non-attenders.

Tables are included only if one of the three has a distribution which would be expected to occur by chance less than one time in 20. ($p < .05$). If such is the case for one table all three are presented so that comparison can be made.

On the basis of the evidence to be examined we can state whether students with a given characterisitc probably made a wise decision to attend or not to attend or whether it probably made no difference.

Mental Characteristics.

Perhaps the most important independent measure that we have of mental ability is students' ACT score (American College Testing Program). The composite score has been found to be the best indicator of performance in social science courses and this is the score used in our study.

As indicated in Table 1, students with lower ACT rank are more likely to choose to be attenders, but the relationship is not strong. For the attenders there is no significant difference between ACT rank and Soc $\geq$ GPA. (Tables 2, 3). For the non-attenders, however, there is a strong relationship between ACT rank and Soc$\geq$GPA. This is the first indication of what we may find is a profile of the successful non-attender.

Grade Point Average is the best measure of student's performance as student, including mental ability, industry and probably many other elusive factors. There is no significant relationship between GPA and the decision to attend, but for both attenders and non-attenders the relationship between GPA and relative performance is statistically significant. (Tables 4, 5, 6). On reflection it is not surprising that the students with lower GPA are more likely to have S $\geq$ GPA. A student whose GPA is high must reach even higher to surpass it in sociology. A student whose GPA is low does not have to reach so high. Tables 5 and 6, for all their statistical significance, probably have no important meaning except to suggest that attending may increase the chances of the student with low GPA.

The final measure that we have of mental ability is the student's grade in sociology, which has been reduced to percentile rank for reasons already mentioned. Again, we find no significant relationship between standing high in sociology and relative performance in sociology. (Tables 7, 8, 9). This is perhaps not surprising in the light of the discussion of the preceding paragraph. It is perhaps worth pointing out that the relationship between GPA and relative performance is much stronger for attenders while that between sociology percentile and relative performance is much stronger for non-attenders.

Perhaps the most important finding of this section is that there is no significant relation between any of our three measures of mental ability and the decision to attend. The relationships are so weak as to deserve little or no attention. If special characteristics of those who decided to attend are to be ascertained, we must examine the demographic and social-psychological characterisitics of the students.

Demographic Characteristics.

The influence of demographic characteristics is probably social-psychological in nature. However, if a social-psychological

ATTENDANCE, ACT RANK, AND RELATIVE PERFORMANCE

TABLE 1

	ACT 1-50%	ACT 51-100%	e
A	194	127	
	69%	62%	7
NA	89	79	
	31%	38%	7
	283	206	

$x^2 = 2.5173$; $p < .2$

TABLE 2
A

	ACT 1-50%	ACT 51-100%	e
S ≥ GPA	91	63	
	47%	50%	3
S < GPA	103	64	
	53%	50%	3
	194	127	

$x^2 = 0.2240$; $p < .7$

TABLE 3
NA

	ACT 1-50%	ACT 51-100%	e
S ≥ GPA	37	48	
	42%	61%	19
S < GPA	52	31	
	58%	39%	19
	89	79	

$x^2 = 6.1634$; $p < .02$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; Q1-1= first questionnaire, the first question, etc. (See Appendix for precise form of questions.)

ATTENDANCE, GPA RANK, AND RELATIVE PERFORMANCE

TABLE 4

	GPA 1-50%	GPA 51-100%	e
A	195	191	
	65%	63%	2
NA	104	112	
	35%	37%	2
	299	303	

$x^2 = 0.3112$; $p < .7$

TABLE 5

A

	GPA 1-50%	GPA 51-100%	e
S ≥ GPA	126	60	
	65%	31%	34
S < GPA	69	131	
	35%	69%	34
	195	191	

$x^2 = 42.6025$; $p < .001$

TABLE 6

NA

	GPA 1-50%	GPA 51-100%	e
S ≥ GPA	62	50	
	60%	45%	15
S < GPA	42	62	
	40%	55%	15
	104	112	

$x^2 = 4.8422$; $p < .05$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, the first question, etc. (See Appendix for precise form of questions.)

ATTENDANCE, SOCIOLOGY STANDING, AND RELATIVE PERFORMANCE

TABLE 7

	Soc% 1-50%	Soc % 51-100%	e
A	213 66%	173 62%	4
NA	109 34%	107 38%	4
	322	280	

$x^2 = 1.2394$; $p < .3$

TABLE 8

A

	Soc% 1-50%	Soc% 51-100%	e
S ≥GPA	93 44%	93 54%	10
S < GPA	120 56%	80 46%	10
	213	173	

$x^2 = 3.8968$; $p. < .05$

TABLE 9

NA

	Soc% 1-50%	Soc% 51-100%	e
S ≥ GPA	38 35%	74 69%	34
S < GPA	71 65%	33 31%	34
	109	107	

$x^2 = 25.4397$; $p < .001$

A = Attender; NA = Non-Attender.; S > GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

linkage is not generally recognized, we have classified the variable as demographic.

The variable number of houses lived in (homes) prior to age 18 is not significantly related to the decision to attend or to performance of attenders. (Tables 10 and 11). However, for non-attenders there is a fairly strong positive relation between number of houses and performance. (Table 12). Perhaps family mobility has given the student experience in self-reliance and independent work.

In the case of father's occupation (Tables 13, 14, 15) there is a relation between status of father's occupation and the decision to attend but not between father's occupation and performance for either attenders or non-attenders. Children of fathers with white-collar occupations were more likely to choose to be non-attenders.

The two demographic factors mentioned above are antecedent to and somewhat apart from the student's life in college. Two significant factors which relate more closely to his college life are the number of quarters of college work completed prior to the quarter in which sociology was taken and living arrangement at the University.

It is not surprising that students who had completed two or more quarters of college were more likely to choose to be non-attenders. (Table 16). It may be surprising that for both attenders and non-attenders there is no significant relationship between number of quarters completed and course performance. (Tables 17, 18). For attenders the relationship is just below the .05 level of significance and it is negative.

As for living arrangements, the data indicated that students who live in an apartment or rented room with one or more other people are more likely to choose to be non-attenders. (Table 19). There is no significant relation between relative course performance and living arrangement. (Tables 20, 21).

Relationships between age of student, as well as size of home town and the decision to attend, were not significant at the .05 level. Relationships with sex, age, and other demographic variables were weaker.

In summary, it is clear that students whose fathers held higher status occupations, who had been in college for more than one quarter, and who lived independently were more likely to be non-attenders. The evidence is that the relative course performance of these students was not less because of non-attendance. Perhaps they as well as the attenders decided wisely, each for himself.

NUMBER OF HOME LOCATIONS, ATTENDANCE AND PERFORMANCE

(QI-21)

TABLE 10

	Many	Few	e
A	144	233	
	62%	65%	3
NA	87	125	
	38%	35%	3
	231	358	

$x^2 = 0.4596$; $p < .5$

TABLE 11

A

	Many	Few	e
S ≥ GPA	71	108	
	49%	46%	3
S < GPA	73	125	
	51%	54%	3
	144	233	

$x^2 = 0.3113$; $p < .7$

TABLE 12

NA

	Many	Few	e
S ≥ GPA	52	57	
	60%	46%	14
S < GPA	35	68	
	40%	54%	14
	87	125	

$x^2 = 4.1233$; $p < .05$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

FATHER'S OCCUPATIONAL STATUS, ATTENDANCE, AND RELATIVE PERFORMANCE

Father's Job (I-20) (QI-10)

TABLE 13

	Low	High	e
A	103 61%	273 61%	0
NA	41 39%	171 39%	0
	144	444	

$x^2 = -4.7553$; $p < .05$

TABLE 14

A

	Low	High	e
S ≥ GPA	46 45%	136 50%	15
S < GPA	57 55%	137 50%	15
	103	273	

$x^2 = 0.7962$; $p < .5$

TABLE 15

NA

	Low	High	e
S ≥ GPA	20 49%	89 52%	3
S < GPA	21 51%	82 48%	3
	41	171	

$x^2 = 0.1412$; $p < .8$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

COLLEGE QUARTERS COMPLETED, ATTENDANCE, AND RELATIVE PERFORMANCE

(QI-7)

TABLE 16

	Many Quarters (2-6)	Few Quarters (0-1)	e
A	267 61%	110 73%	12
NA	173 39%	40 27%	12
	440	150	

$x^2 = 7.7618$; $p < .01$

TABLE 17

A

	Many Quarters	Few Quarters	e
S ≥ GPA	120 45%	61 55%	10
S < GPA	147 55%	49 45%	10
	267	110	

$x^2 = 3.4481$; $p < .1$

TABLE 18

NA

	Many Quarters	Few Quarters	e
S ≥ GPA	89 51%	22 55%	4
S < GPA	84 49%	18 45%	4
	173	40	

$x^2 = 0.1645$; $p < .7$

A = Attender; NA = Non-Attender; S≥ GPA = Sociology percentile rank is higher than GPA; S< GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

LIVING ARRANGEMENT, ATTENDANCE, AND RELATIVE PERFORMANCE

(QI-41)

TABLE 19

	Other	Apt. etc.	e
A	331	38	
	65%	52%	13
NA	174	35	
	35%	48%	13
	505	73	

$x^2 = 5.0278$; $p < .05$

TABLE 20

	A: Other	A: Apt. etc.	e
S ≥ GPA	154	20	
	47%	53%	6
S < GPA	177	18	
	53%	47%	6
	331	38	

$x^2 = 0.5100$; $p < .5$

TABLE 21

	NA: Other	NA: Apt. etc.	e
S ≥ GPA	87	21	
	50%	60%	10
S < GPA	87	14	
	50%	40%	10
	174	35	

$x^2 = 1.1669$; $p < .3$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

Social-Psychological Variables.

Frequence of church attendance is treated as indicative of a social-psychological characteristic (possibly conformity) and not as having any other meaning. Students who report attending church twice a month or more often are much more likely to decide to be attenders than those who go to church less often. (Table 22). However, among both attenders and non-attenders those who go to church often are less likely to have Soc $\geq$ GPA. (Table 23, 24). Among attenders the relationship is not significant at the .05 level but among non-attenders $p < .01$ and almost at the .001 level. It may be that mental conformity, as evidenced by class attendance and church attendance, is antithetical to the study of sociology. Perhaps the sociological perspective is so different from the conventional perspective that the conventional mind finds the former difficult to grasp. If this is the explanation, we would not expect a negative relationship between church attendance and performance to be found in other disciplines.

In Questionnaire I-26, the student was asked to give in retrospect a perception of himself during his senior year in high school. Since most of the students were college freshmen or sophomores, we may assume that a self-perception which was accurate one or two years earlier would not be very different from a self-perception when this questionnaire was answered. The question was asked with reference to the past because it was felt that students might be more willing to respond about the past than the present. Only 424 out of 602 felt that they fitted into one of the four categories described. Those who classified themselves as "the high-achieving studious" were much more likely to choose to be attenders. (Table 25). But these, whether attenders or non-attenders, were not very likely to have Soc $\geq$ GPA. (Tables 26, 27). Possibly their GPA's were so high that this was too difficult to achieve.

These are the only social-psychological characteristics which distinguish between attenders and non-attenders with a $p < .05$. As regards relative performance, none of the social-psychological characteristics are significantly related to performance for attenders, but several do have a significant relation for non-attenders.

Two of these have to do with running errands, which has been regarded as one means by which the child may become independent and develop a strong need for achievement. For these subjects the reverse seems to have been the case. Those who were sent on errands early and often are slightly, but not significantly, more likely to become non-attenders. (Tables 28, 31). But those who were sent on errands early and

CHURCH ATTENDANCE, CLASS ATTENDANCE, AND PERFORMANCE

(QI-5)

TABLE 22

	High	Low	e
A	247	138	
	69%	57%	12
NA	110	106	
	31%	43%	12
	357	244	

$x^2 = 10.0426$; $p < .01$

TABLE 23

	A High	A Low	e
S ≥ GPA	111	74	
	45%	54%	9
S < GPA	136	64	
	55%	46%	9
	247	138	

$x^2 = 2.6746$; $p < .2$

TABLE 24

	NA High	NA Low	e
S ≥ GPA	46	66	
	42%	62%	10
S < GPA	64	40	
	58%	38%	10
	110	106	

$x^2 = 9.0389$; $p < .01$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

SELF-PERCEPTION, ATTENDANCE, AND PERFORMANCE

(QI-26)

TABLE 25

	Studious	Other	e
A	74	206	
	75%	62%	13
NA	26	124	
	21%	38%	13
	94	330	

$x^2 = 4.6705$; $p < .05$

TABLE 26

A

	Studious	Other	e
S ≥ GPA	30	104	
	43%	50%	7
S < GPA	40	102	
	51%	50%	7
	70	206	

$x^2 = 1.2171$; $p < .3$

TABLE 27

NA

	Studious	Other	e
S ≥ GPA	14	66	
	60%	53%	7
S < GPA	10	58	
	40%	47%	7
	24	124	

$x^2 = 0.2112$; $p < .7$

A = Attender; NA = Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S< GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

AGE FOR ERRANDS, ATTENDANCE, AND PERFORMANCE

(QI-20)

TABLE 28

	Young	Old	e
A	247	126	
	63%	65%	2
NA	144	68	
	37%	35%	2
	391	194	

$x^2 = 0.1772$; $p < .7$

TABLE 29

A

	Young	Old	e
S ≥ GPA	124	56	
	50%	44%	6
S < GPA	123	70	
	50%	56%	6
	247	126	

$x^2 = 1.1079$; $p < .3$

TABLE 30

NA

	Young	Old	e
S ≥ GPA	68	42	
	47%	62%	15
S < GPA	76	26	
	53%	38%	15
	144	68	

$x^2 = -3.9128$; $p < .05$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

FREQUENCY OF ERRANDS, ATTENDANCE AND PERFORMANCE

(QI-19)

TABLE 31

	Freq.	Not Freq.	e
A	272	112	
	63%	66%	3
NA	157	58	
	37%	34%	3
	429	170	

$x^2 = 0.3252$; $p < .7$

TABLE 32

A

	Freq.	Not Freq.	e
S ≥ GPA	137	48	
	50%	43%	7
S < GPA	135	64	
	50%	57%	7
	272	112	

$x^2 = 1.7924$; $p < .2$

TABLE 33

NA

	Freq.	Not Freq.	e
S ≥ GPA	74	38	
	47%	66%	19
S < GPA	83	20	
	53%	34%	19
	157	58	

$x^2 = 5.7354$; $p < .02$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

often and who became non-attenders are significantly less likely to have Soc ≥ GPA. (Tables 30, 33). If they had a strong need for achievement, the achievement was not made in sociology.

A similar situation is found in response to the statement: "I would feel conspicuous if I were not dressed the way most of my friends are dressed." Responses of attenders and non-attenders were not significantly different. (Table 34). But among non-attenders those who disagreed with the statement were significantly more likely to have Soc ≥ GPA. (Table 36).

On a number of the questions relating to social-psychological factors the variables differed with a probability only slightly greater than .05. There is a distinct possibility that study of combinations of these, in the light of existing theory, would clarify further the problem being explored.

FEEL CONSPICUOUS, ATTENDANCE AND PERFORMANCE

(QII-21)

TABLE 34

	Agree	Disagree	e
A	211	173	
	65%	63%	2
NA	113	102	
	35%	37%	2
	324	275	

$x^2 = 0.3170$; $p < .7$

TABLE 35

	A Agree	A Disagree	e
S ≥ GPA	98	88	
	46%	51%	5
S < GPA	113	85	
	54%	49%	5
	211	173	

$x^2 = 0.7441$; $p < .5$

TABLE 36

	NA Agree	NA Disagree	e
S ≥ GPA	51	61	
	45%	60%	15
S < GPA	62	41	
	55%	40%	15
	113	102	

$x^2 = 4.6237$; $p < .05$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

4

EXAMINATION OF DATA FOR INTERACTION EFFECTS

The previous chapters dealt with the independent effects of selected variables on (1) the choice of attending or not attending class and on (2) students' relative performance. This section examines the data for possible interaction effects or combined effects among the selected independent variables on student performance. The model used in testing for interaction was developed for use with attribute data by Coleman and Robertson.[1] The interaction model is an extension of Coleman's[2] least squares model that provides parameters which estimate the additive effects of selected independent variables considered simultaneously. In the Coleman-Robertson model the interaction effects are estimated in much the same way as main effects in the original Coleman multivariate model.

> In a table of proportions of persons in a given state of the dependent variate by states of the independent variates such as those in the present study the estimate is the average of the difference in proportions between cells in which interaction (or main effect) should increase the proportion and cells in which interaction (or main effect) should decrease the proportions. These are the same comparisons one would do in an analysis of variance with one observation per cell.[3]

In this analysis, the three independent variable model was utilized. The variables examined were dichotomized in the same manner as in the tables in Chapter 3.

There was almost an infinite number of ways that the variables in the study could be combined into sets of three for analysis. Thus the writers make no claim for an exhaustive study. There is no significant body of theory to serve as a guide in combining the variables into meaningful sets, and

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[1] James S. Coleman and Leon S. Robertson, "Multivariate Analysis," a seminar held at The Johns Hopkins University, December, 1965.

[2] James S. Coleman, Introduction to Mathematical Sociology (New York: Free Press, 1964), pp. 189-240.

[3] Leon S. Robertson, personal correspondence, January, 1966.

empirical studies which generally deal with but two variables are of limited value in this respect. Therefore in the absence of a better rationale the variables were combined as follows: (1) Inasmuch as the primary independent variable in this study was the attendance status of students, it was included in most of the three variable sets analyzed. (2) Variables amenable to dichotomization were added to sets according to their sequential order on the data cards.

In the interest of brevity and becuase of the exploratory nature of this analysis, data for only one set of variables are to be presented. The findings, however, for the other sets are reported in the summaries below.

No significant interaction effects on relative performance were found among birth order (dichotomized between first born and other), age at which money was first earned, and attendance. Likewise no combination of the dichotomized variables (1) father's education, (2) sex of subject, and (3) number of quarters of college work completed (divided between two and three or more quarters) was found to significantly affect student performance. Similarly no significant interaction was evidenced between (1) inner-other directedness and attendance status, (2) sex of student and attendance, (3) attendance and professor, (4) authoritarianism (F-scale) and attendance, and (5) authoritarianism and church attendance.

Variables influencing student performance through significant interaction effects are as follows: (1) frequency of running errands and age at first job; (2) frequence of running errands and attandance; (3) frequency of running errands, age at first job, and attendance; (4) amount of time studied and attendance; (5) preference for being with others while waiting to take an exam, amount of time studied, and attendance status; (6) frequency of church attendance and age; (7) size of graduating class and population of home town, and (8) amount of time studied and inner-other directedness. Most of these findings are reflected in the chi-square analysis of the preceding section. In these cases the direction of the influence is identical for both analyses.

Table 37 shows the proportion of subjects having $S \geq$ GPA for each state of the three independent variables--sex of subject, professor, attendance status. Two significant interaction effects appear among these variables: (1) between sex and subject and professor and (2) among all three independent variables. The data indicate that the

TABLE 37

PERCENTAGE OF STUDENTS WITH S ≥ GPA BY
SEX, PROFESSOR, AND ATTENDANCE STATUS

Professor	Prof. 1				Prof. 2			
Attendance	attender		non-attender		attender		non-attender	
Sex of Subject	male	female	male	female	male	female	male	female
Percent	48.3%	53.2%	43.1%	59.0%	46.5%	45.8%	63.6%	45.3%
N	43	41	25	23	47	54	35	29
TOTAL	89	77	68	39	101	118	55	64

Interaction Parameters

Sex and Attendance = 0.0165	$p > .05$
Sex and Professor = 0.0997	$p < .05$
Attendance and Professor = 0.0403	$p > .05$
Sex, Attendance and Professor = 0.0712	$p < .05$

performance of females was better than males in Prof. 1 classes regardless of attendance and that the performance of males was better than females in Prof. 2 classes regardless of attendance. Further, male attenders performed somewhat better than male non-attenders in Prof. 1 classes whereas the reverse was true with Prof. 2. Inasmuch as grades were assigned without the professor's knowledge of the name, sex, and attendance status of the student, bias on the part of the professor can be ruled out. Thus these data support the idea that students vary in their response to teachers and to learning environments.

The two professors engaged in the study were rather fully in agreement as to their approach to sociology. Also, as mentioned earlier, they endeavored to use the same teaching method, which was a combination of lecture and discussion.

The professors were both male, but differed in some other demographic characteristics. At the time data collecting was begun (January, 1967), Prof. 1 was 43 years of age, Prof. 2 was 57. Prof. 1 was married and the father of three sons, ages 16, 14, and 10. Prof. 2 was a bachelor. Prof. 1 was short (64 inches) with a full head of hair and rather active; Prof. 2 was slightly taller (67½ inches) balding and less active. What effect these and other personal characteristics have upon student's perception of and response to the professor cannot be determined from our data.

5

ATTENDANCE AND RELATIVE PERFORMANCE: COMPOSITE FIGURES

Most other studies of attendance, non-attendance and course performance have compared grades, usually mean grades, of the two categories and have found no significant difference. In some cases the students have been arbitrarily assigned to attend or non-attend categories. This study differs in that it compares each student's sociology grade with his GPA, thus giving an indication of his relative performance. Also, the students were permitted to choose whether they would be attenders or non-attenders, on the assumption that the students differ in their need for explanation and class discussion. Also, it was felt that their self-perception in this respect may be accurate in a high proportion of cases.

As indicated in Table 38, there is no significant difference in the relative performance of attenders and non-attenders. When separated for the two professors the finding is the same. (Tables 39, 40). Also, the finding is the same for the category of 195 students in the second quarter of introductory sociology, who were all taught by the same professor. (Table 41).

This uniform finding seems to permit one or more of three interpretations. First, perhaps class attendance is not important to learning the type of material covered by the true-false and multiple choice test questions used. Second, perhaps class attendance is important, but the student's self-perception of need for class attendance was good, and consequently those who needed classroom guidance chose to attend and those who did not chose to be non-attenders. Review of the relationship between relative performance and the mental, demographic, and social-psychological characteristics already considered gives some support to this position. A third possibility is that the objective tests used were not a good measure of learning and that either the attenders or the non-attenders would have a significantly higher score if a better measure were used. The data treated in the next chapter give some support to this third position.

ATTENDANCE, RELATIVE PERFORMANCE AND PROFESSOR

(Composite Figures for First Quarter Sociology)

TABLE 38

	A	NA	e
S ≥ GPA	186	112	
	48%	52%	4
S < GPA	200	104	
	52%	48%	4
	386	216	

$x^2 = 0.7443$; $p < .5$

TABLE 39

Professor 1

	A	NA	e
S ≥ GPA	84	48	
	51%	49%	2
S < GPA	82	49	
	49%	51%	2
	116	97	

$x^2 = 0.0306$; $p < .9$

TABLE 40

Professor 2

	A	NA	e
S ≥ GPA	102	64	
	46%	53%	7
S < GPA	118	55	
	54%	47%	7
	220	119	

$x^2 = 1.7005$; $p < .2$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

TABLE 41

ATTENDANCE AND RELATIVE PERFORMANCE

(Composite Figures for Second Quarter of Sociology)

	A	NA	e
S ≥ GPA	49	43	
	52%	43%	9
S < GPA	45	58	
	48%	57%	9
	94	101	

$x^2 = 1.7831$; $p < .2$

A = Attender; NA = Non-Attender ; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

6

ATTENDANCE, PERFORMANCE AND TYPE OF LEARNING

As noted in the preceding chapter, there was no significant difference in the relative performance of the composites of attenders and non-attenders in our sample of 602 students in first quarter introductory sociology or the sample of 195 students in second quarter. Three possible explanations were mentioned, one of which related to the type of tests used.

Without knowing any relationships which would be found among the variables being studied, in the second year of data collecting the researchers became curious about the testing instruments being used and undertook an analysis of the questions on the final examination. Guided by the thinking of A. Montgomery Johnston,[1] they analyzed the questions on the final examination and found that almost all the questions could be classified as conceptual, factual or generalizing.

The three were defined as follows:

A fact: an actual and specific event. (e.g., John is an American.)

A concept: the sum of a person's ideas about something. (e.g., My concept of an American is all I know about him.)

A generalization: a statement of relationship between two concepts. (e.g., America has made important contributions to world history.)

Three graduate students in education who were acquainted with Johnston's categories were asked to classify each multiple choice and true-false item on the final examination. If two or all three judges agreed, their classification was accepted. If the three differed, the item was discarded. Out of 100 items (fifty true-false and fifty multiple choice) five of each were discarded because of lack of agreement. The multiple choice items were given a weighting of 2, the true-false a weighting of 1. The result was a possible score of 45 points on factual, 43 points on conceptual and 47 points on generalizing. The final examination for each of 266 students

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[1] A. Montgomery Johnston, "Teaching The Social Sciences Content" in The Elementary School: Principles and Problems, ed. Joe L. Frost and Thomas Rowland (Boston: Houghton Mifflin, 1969), pp. 454-455.

was graded separately on each of these types of questions, and the grade was multiplied by the appropriate weighting factor to convert it to a base of 100.

The grade for each of these 266 students was punched on his IBM card. Attenders and non-attenders were compared on performance in each of these three types of learning. The means for attenders and non-attenders were compared using the t test as an indication of significance. The distributions on each were compared using F as a indicator of significance.

The means of non-attenders were higher on factual and conceptual--material which could be memorized. The mean for attenders was higher on generalizing--relationships involving broader understanding. (Table 42). These means were not different at the .05 level of significance but they do suggest the possibility that attenders and non-attenders are engaged in different types of learning, or are learning different types of material.

The distributions for factual and generalizing were significantly different. To give an idea of the differences in distribution, the percentages of attenders and non-attenders in each quartile for each type of learning are indicated in Table 43. On conceptual learning 34 students had the grade 84, which resulted in considerable difference in the size of the quartiles.

Many interesting differences in the distribution for attenders and non-attenders are evident. For example, on factual and generalizing learning 24% of the attenders are in quartile 4.

For the non-attenders, 31% are in quartile 4 on factual learning but only 21% on generalizing learning.

The data at hand do not permit us to reach any firm conclusions about differences in types of learning. But they do indicate a need for careful attention to test construction in terms of the objectives of the course and for research on this point with a larger number of subjects.

TABLE 42

TYPE OF LEARNING: MEANS FOR ATTENDERS AND NON-ATTENDERS

Type of Learning	Mean A	Mean NA	t	Probability
Factual	63.07	65.33	1.1584	$.1 > p < .2$
Conceptual	73.42	74.04	0.37117	$.8 < p > .7$
Generalizing	76.64	75.89	0.61596	$.6 > p < .5$

TABLE 43

TYPES OF LEARNING: DISTRIBUTION OF SCORES BY QUARTILES

Factual Learning for Attenders and Non-Attenders

	Q_1	Q_2	Q_3	Q_4	
A	23.	28.	26.	24.	101%
NA	16.	33.	20.	31.	100%
N	54	79	63	60	266

F for distribution = 1.282; $p < .1$

Conceptual Learning for Attenders and Non-Attenders

	Q_1	Q_2	Q_3	Q_4	
A	27.	22.	17.	33.	99%
NA	22.	21.	27.	28.	98%
N	68	58	56	84	266

F for distribution = 1.016; $p \geq .1$

Generalizing Learning for Attenders and Non-Attenders

	Q_1	Q_2	Q_3	Q_4	
A	23.	27.	25.	24.	99%
NA	30.	21.	28.	21.	100%
N	68	67	69	62	266

F for distribution = 1.355; $p < .05$

7

STUDENT REPORTS AND EVALUATIONS

Some items in the second questionnaire inquired about the students' study practices for this course and other items asked for experience and evaluations. The questionnaire was given after the second test and before the final examination. It was administered by a representative of the University's Learning Resources Center, with the professor absent. The completed questionnaires were retained by the Learning Resources Center until the professors had reported their grades, thus assuring that the students' reports and evaluations would not influence their final grades.

Attenders reported that they studied more hours and more regularly than non-attenders. (Tables 44, 47). The reported amount of study time had no significant relation to relative performance. (Tables 45, 46). An even greater difference between attenders and non-attenders was reported in frequency of study. For both attenders and non-attenders there was a negative relationship between reported study frequency and relative performance (Tables 48, 49), with $p < .05$ for attenders and slightly greater for non-attenders. One can only conclude that by the time students reach college many have discovered that with little and infrequent study (cramming) they can perform up to their own standard.

Attenders and non-attenders were asked slightly different questions about friendships formed as a result of attending class or non-attending. The attenders were equally divided on positive and negative responses. The non-attenders answered more in the negative. When these responses are related to relative performance, a strong positive relationship is found for the attenders and no relation for the non-attenders. (Tables 50, 51).

The non-attenders were asked several questions regarding the influence of non-attending upon time use. (Questions II, 32-35). Their report: 54% stated that they studied other courses more; 51% reported more time in profitable reading; 18% earned more at a paid occupation; 48% spent more time in athletics. Only the first of these has a significant relation to relative performance. Those who studied other courses more were less likely to have Soc $\geq$ GPA. (Table 52).

Attenders were not pleased with the influence of their decision upon their test grades, whereas non-attenders were.

HOURS OF STUDY, ATTENDANCE AND RELATIVE PERFORMANCE

(QII-8)

TABLE 44

	A	NA	e
Less Hours	156 41%	146 48%	27
More Hours	229 59%	70 32%	27
	385	216	

$x^2 = 40.5683$; $p < .001$

TABLE 45

	A		
	S ≥ GPA	S < GPA	e
Less Hours	76 41%	80 40%	1
More Hours	110 59%	119 60%	1
	186	199	

$x^2 = 0.0173$; $p < .90$

TABLE 46

	NA		
	S ≥ GPA	S < GPA	e
Less Hours	78 70%	68 65%	5
More Hours	34 30%	36 35%	5
	112	104	

$x^2 = 0.4464$; $p < .7$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

STUDY FREQUENCY, ATTENDANCE AND RELATIVE PERFORMANCE

(QII-9)

TABLE 47

	A	NA	e
Less Freq.	112 29%	136 63%	34
More Freq.	273 71%	80 37%	34
	385	216	

$x^2 = 65.5006$; $p < .001$

TABLE 48

	A S ≥ GPA	A S < GPA	e
Less Freq.	63 34%	49 25%	9
More Freq.	123 66%	150 75%	9
	186	199	

$x^2 = 3.9859$; $p < .05$

TABLE 49

	NA S ≥ GPA	NA S < GPA	e
Less Freq.	77 69%	59 57%	12
More Freq.	35 31%	45 43%	12
	112	104	

$x^2 = 3.3406$; $p < .10$

A = Attender; NA = Non-Attender;, S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

FORMING FRIENDSHIPS, ATTENDANCE AND RELATIVE PERFORMANCE

TABLE 50 (QII-45)

	A: S ≥ GPA	A: S < GPA	e	
Yes	102	89		
	56%	45%	11	
No	81	109		
	44%	55%	11	
	183	198		

$x^2 = 4.4274$; $p < .05$

TABLE 51 (QII-38)

	NA: S ≥ GPA	NA: S < GPA	e	
Yes	49	40		
	44%	39%	5	
No	63	63		
	56%	61%	5	
	112	103		

$x^2 = 0.5343$; $p < .5$

A = Attender; NA = Non-Attender; S≥ GPA = Sociology percentile rank is higher than GPA; S< GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

RELATIVE PERFORMANCE OF NON-ATTENDERS WHO REPORTED STUDYING OTHER COURSES MORE

(QI-32)

TABLE 52

	S ≥ GPA	S < GPA	e
Yes	49	40	
	44%	39%	5
No	63	63	
	56%	61%	5
	112	103	

$x^2 = 0.5343$; $p < .5$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire first question, etc. (See Appendix for precise form of questions.)

Only 37% of attenders thought that they had made better test grades by attending, but 65% of non-attenders felt they had made as good test grades as if attending. The students whose Soc $\geq$ GPA held these beliefs in larger proportion. (Tables 53,54).

The final question for both attenders and non-attenders was: Knowing what you now know, if you had the choice to make again would you choose to be an "attender" /"non-attender"/? The majority of both responded "yes," but the proportion for non-attenders was much greater. (Table 55). As regards relative performance, among attenders there was a positive relation between a yes response and Soc $\geq$ GPA, but no relation among non-attenders. (Tables 56, 57).

When this response is related to GPA the reverse is found with an interesting variation. (Tables 58, 59). There is no relation for attenders and a strong positive relation for non-attenders. From these last four tables it can be surmised that attenders with Soc $<$ GPA were disappointed that attendance had not resulted in a better grade. Also, that non-attenders with high GPA may have felt that they had missed something by not attending class. Or were they merely concerned that a majority of them had S $<$ GPA? (Table 6, Chapter 3).

TEST GRADES, ATTENDANCE AND RELATIVE PERFORMANCE

TABLE 53

Thought Made Better Grades (QII-42)

	A: S ≥ GPA	A: S < GPA	e
Yes	76	64	
	42%	33%	9
No	106	132	
	58%	67%	9
	182	196	

$x^2 = 3.3550$; $p < .10$

TABLE 54

Thought Made as Good Grades (QII-37)

	NA: S ≥ GPA	NA: S < GPA	e
Yes	80	60	
	72%	59%	13
No	31	42	
	28%	41%	13
	111	102	

$x^2 = 4.1418$; $p < .05$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S < GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

WOULD YOU MAKE THE SAME DECISION ON ATTENDANCE AGAIN?

(QII-39,46)

TABLE 55

	A	NA	e
Yes	199 53%	180 84%	31
No	180 47%	35 16%	31
	379	215	

$x^2 = 57.8231$; $p < .001$

TABLE 56

A

	S≥ GPA	S <GPA	e
Yes	105 58%	94 47%	11
No	76 42%	104 53%	11
	181	198	

$x^2 = 4.2095$; $p < .05$

TABLE 57

NA

	S≥ GPA	S <GPA	e
Yes	93 83%	87 84%	1
No	19 17%	16 16%	1
	112	103	

$x^2 = 0.0805$; $p < .8$

A = Attender; NA = Non-Attender; S≥GPA = Sociology percentile rank is higher than GPA; S< GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

WOULD YOU MAKE THE SAME DECISION ON ATTENDANCE AGAIN?

(QII-39, 46)

TABLE 58

A

	GPA 1-50	GPA 51-100	
Yes	136 53%	63 52%	1
No	121 47%	59 48%	1
	257	122	

$x^2 = 0.0543$; $p < .90$

TABLE 59

NA

	GPA 1-50	GPA 51-100	
Yes	77 43%	26 74%	31
No	103 57%	9 26%	31
	180	35	

$x^2 = 11.6564$; $p < .001$

A = Attender; NA = Non-Attender; S ≥ GPA = Sociology percentile rank is higher than GPA; S ≤ GPA = the opposite; QI-1 = first questionnaire, first question, etc. (See Appendix for precise form of questions.)

8

CONCLUSIONS AND RECOMMENDATIONS

Regular class attendance is the conventional practice at the University of Tennessee. The decision to be a non-attender thus involved choice of an unconventional practice. Those who made this choice were more likely to be children of fathers with high-status occupations who had been in college two quarters or longer; lived in a rented room or apartment with others, attended church once or less per month and perceived themselves as other than studious. (Tables 13, 16, 19, 22, 25). The non-attenders stated that they studied fewer hours and less frequently, and they indicated that they would make the same decison again in higher proportion than the attenders. (Tables 43, 46, 54). This commitment to make the same choice again was the same for non-attenders whether the student had S $\geq$ GPA or not, whereas for non-attenders there was a significant difference. (Tables 55, 56). However, the non-attenders with high GPA, in a proportion significantly higher than those with low GPA, stated that they would not make the same choice again. (Table 58). These facts give a fairly good profile of the student who chose to be a non-attender and how he felt about the decision at the end of the course (but before he received his final grade).

The non-attenders who had S $\geq$ GPA are designated as "successful non-attenders." They are characterized by high ACT, low GPA, high standing in sociology, high family mobility (many different homes), low church attendance, late and infrequent errand running as children. (Tables 3, 6, 9, 12, 24, 30, 33, 36). They reported that they did not study other courses more than they would have if they had been attenders and they thought they made as good grades as they would have if attending. (Tables 51, 53).

There was no significant difference between the proportion of students of Prof. 1 and Prof. 2 who decided to be attenders, nor was there a significant difference in the relative performance of students of the two professors. However, when this comparison was made adding sex as an additional variable, a significant interaction effect was disclosed. This indicates further the importance of individual differences to the classroom relationship.

The above facts are all related to relative performance on true-false and multiple choice tests containing a variety of items. When the items were classified as factual, conceptual

or generalizing and 266 students were graded on these parts of the final examination, it was found that the non-attenders had higher average (mean) scores on factual and conceptual learning and the attenders had a higher mean score on generalized learning. The means for attenders and non-attenders were not significantly different, but the distributions of factual and generalizing scores were significant. These latter findings are based upon scores for only 266 students on about thirty items for each type of learning. The findings suggest the possibility that attenders and non-attenders may be acquiring different types of learning.

For modern mass education some form of objective examining seems to be necessary, especially in introductory courses. The findings on types of learning, though not conclusive, suggest the need for further research on the type of learning measured by objective tests.

The mean grades for attenders and non-attenders of this study were not significantly different, as was true in the other studies mentioned in Chapter 1. However, the other findings of this research emphasize that the summary statement,"there is no significant difference in performance, regardless of the number of class meetings, etc.," is an over-simplification. For example, in this research some characteristics of successful and unsuccessful non-attenders have been indicated. What would have happened to the unsuccessful if they had attended we do not know.

A next step might be to permit students to request permission to be non-attenders and to give approval only to those who approximate our profile of the successful non-attender. With such an arrangement a high proportion of students with success in relative performance ($S \geq GPA$) would be expected. There would also be a saving of students' and professors' time, and hopefully, more attention to the students who attend regularly.

REFERENCES

Bradby, Edward, The University Outside Europe, London: Oxford University Press, 1939, pp. 58-59.

Braude, Jacob M., Speakers Encyclopedia of Stories, Quotations and Anecdotes. Englewood Cliffs, N.J.: Prentice-Hall, 1955, p. 133.

Brubacher, John S. and Willis Rudy, Higher Education in Transition. New York: Harper and Row, 1958, p. 81.

Coleman, James S., Introduction to Mathematical Sociology. New York: Free Press, 1964.

Coleman, James S., and Leon S. Robertson, "Multivariate Analysis," seminar at The John Hopkins University, December, 1965.

Johnston, A. Montgomery, "Teaching the Social Sciences Content," Joe L. Frost and Thomas Rowland (eds.), Boston: Houghton Mifflin, 1969, pp. 454-455.

Robertson, Leon S., personal correspondence, January, 1966.

Siegel, Laurence and Lila C. Siegel, "A Multivariate Paradigm for Educational Reserach," Psychological Bulletin, 68:5, pp. 306-326.

Stevenson, Burton (ed.), The Home Book of Quotations: Classical and Modern. New York: Dodd, Meade and Co., 1956, p. 2069.

APPENDIX A

SOCIOLOGY DEPARTMENT

As a student in Sociology _____, Section _____, I understand that each student may choose to be a non-attender of class meetings or a regular attender.

In choosing to be a non-attender, I understand that after the first week of classes, I will not attend class except for the two (2) tests and the final examination on the dates scheduled.

If my grade on the first test is poor it will be my privilege to change to become a regular class attender if I wish.

Signed _____

Knoxville Address _____

Knoxville Tele. No. _____

In choosing to be a regular attender, I understand that I am expected to attend every class period prepared to discuss and answer questions on the material assigned.

Signed _____

Knoxville Address _____

Knoxville Tele. No. _____

(Sign in only one of the blanks above)

APPENDIX B

I

SOCIOLOGY DEPARTMENT

UNIVERSITY OF TENNESSEE

The purpose of this study is to examine variations in human behavior as they are related to the learning process. This is not a test. There are a few questions of fact, but there are no "right" or "wrong" answers for most of the questions. For these the only "right" answer is your feeling or your opinion. Thus your first impression is usually your best answer.

We assure you that all the information which you give will be kept strictly confidential. A code number will be assigned and this sheet removed before the data are examined. In this manner, your answers will not be associated with you in any way.

Read each question carefully and check only one of the several possible answers to each question, unless instructed to do otherwise. Please answer each question.

Thank you very much.

Your name _____

Number to be
assigned later

SOCIOLOGY _____; SECTION _____;

QUARTER _____; DAYS & HOURS _____.

1. What is your sex?

   (1)_____male

   (2)_____female

2. Marital status

   (1)_____single

   (2)_____married

   (3)_____separated

   (4)_____divorced

   (5)_____widowed

3. What is your age? (Last birthday)

   (1)_____17 and below

   (2)_____18

   (3)_____19

   (4)_____20

   (5)_____21

   (6)_____22

   (7)_____23

   (8)_____24 or over

4. What is your religious preference?

   (1)_____Baptist

   (2)_____Methodist

   (3)_____Presbyterian

   (4)_____Episcopal

(5)_____Catholic

(6)_____Jewish

(7)_____None of these: it is _____

(8)_____No preference

5. On the average, how often do you attend church services and activities?

(1)_____less than once per month

(2)_____once per month

(3)_____twice per month

(4)_____three times per month

(5)_____four times per month

(6)_____five to eight times per month

(7)_____over eight times per month

6. How far did your father go in school?

(1)_____eighth grade or less

(2)_____ some high school, but did not finish

(3)_____high school graduate

(4)_____some college, but did not finish

(5)_____college graduate

(6)_____post graduate or professional training after college

7. How many quarters of college work have you completed prior to this quarter (including work done elsewhere): _____

8. What is the population of the town or city in which you make your home?

(1)_____under 10,000

(2)_____from 10,000 to 50,000

(3)_____above 50,000

(4)_____I live in the country

9. How many students were in your high school graduating class? _____

10. What is (or was) your father's job?

(1)_____works as a laborer or section hand, etc.

(2)_____operates a machine in a factory, or drives a truck, etc.

(3)_____foreman in a factory, ship or shipping warehouse, etc.

(4)_____salesman, clerk in a store or office

(5)_____manager, owns and runs own business, or works as a manager for a large company or the government

(6)_____professional (doctor, lawyer, teacher, engineer, etc.)

(7)_____farmer (check one)

_____owner _____operates for share

(8)His job is not like any of these. It is _____.

11. How many brothers and sisters do you have?

(0)_____none (5)_____five

(1)_____one (6)_____six

(2)_____two (7)_____seven

(3)_____three (8)_____eight or more

(4)_____four

12. What is the position of your birth in relation to your brothers and sisters?

(1)_____first (5)_____fifth

(2)_____second (6)_____sixth

(3)_____third (7)_____seventh or over

(4)_____fourth (8)_____only child

13. How many older brothers do you have? (Circle the number)

0 1 2 3 4 5 6 7 8 9

14. How many younger brothers do you have? (Circle the number)

0 1 2 3 4 5 6 7 8 9

15. How many older sisters do you have? (Circle the number)

0 1 2 3 4 5 6 7 8 9

16. How many younger sisters do you have? (Circle the number)

0 1 2 3 4 5 6 7 8 9

17. How old were you when you first earned some money except from your parents?

(1) I was _____ years old.

(2) I never have earned money from persons other than my parents. _____.

18. How old were you when you first had a job away from home lasting for a week or more (even if you lived at home)?

(1) I was _____ years old.

(2) I have never had a job away from home lasting for as long as a week _____.

19. How often did your mother (or father) send you to the store alone to buy things or on other errands?

(1)_____frequently

(2)_____sometimes

(3)_____not very often

(4)_____never

20. How old were you when your parents first started sending you on errands?

(1) I was _____ years old.

(2) I was never sent on errands _____.

21. From the time that you were born until you reached 18 (until the present, if you are not yet 18) your family lived in the following number of different houses. _____

22. When you study, do you usually prefer to study:

(1)_____with someone else studying the same material

(2)_____with someone else present, but not studying the same material

(3)_____alone with radio or television on

(4)_____alone with a minimum of noise

23. What sports or hobbies do you like best?

(1)_____

(2)_____

(3)_____

24. In general, on what things do you prefer to spend most of your time?

(1)_____

(2)_____

(3)_____

25. Suppose that you are scheduled to take a college entrance examination in the room with 30 other students. The start of the exam is unavoidably delayed one hour. How would you prefer to spend this time while waiting for the exam to begin:

(1)_____I would very much prefer being alone.

(2)_____I would prefer being alone.

(3)_____I would slightly prefer being alone.

(4)_____I would slightly prefer being together with others.

(5)_____I would prefer being together with others.

(6)_____I would very much prefer being together with others.

26. It has been found that many high school students conform predominately to one of the following types. Please mark the one into which you think you should have been classified during your senior year in high school.

(1)_____ The social leader. (Such students conform more to teenage mores than to teachers' expectations.)

(2)_____ The high-achieving studious. (Such students put their school work ahead of pleasure.)

(3)_____ The creative intellectual. (Such students do not conform to teacher's standards or to teenage mores. They are independent and their class grades are usually lower than their ability test grades.)

(4)_____ The Rebel. (Such students are non-conformists, more extreme than the creative intellectuals. They show dislike for regimentation for all types.

(5)_____ I was not like any of the above.

I was _____

27. If a good friend strongly recommended to me a medicine for a headache, I would try the medicine as my friend suggested.

(1)_____definitely yes

(2)_____probably yes

(3)_____possibly yes

(4)_____possibly no

(5)_____probably no

(6)_____definitely no

28. What is your most important goal in attending college?

(1)_____To learn to enjoy life

(2)_____To develop my mind and intellectual abilities

(3)_____To secure vocational or professional training

(4)_____To make a desirable marriage

(5)_____To earn a high income

(6)_____To develop moral standards

(7)_____To become a cultured person

(8)_____To develop my personality

(9)_____To develop a satisfying philosophy

(10)_____None of these

29. What is your second most important goal in attending college?

(1)_____To learn how to enjoy life

(2)_____To develop my mind and intellectual abilities

(3)_____To secure vocational or professional training

(4)_____To make a desirable marriage

(5)_____To earn a higher income

(6)_____To develop moral standards

(7)_____To become a cultured person

(8)_____To develop my personality

(9)_____To develop a satisfying philosophy

(10)_____None of these

30. I would try the drug if I knew that it had the approval of well-known physicians and drug companies.

(1)_____definitely yes

(2)_____probably yes

(3)_____possibly yes

(4)_____possibly no

(5)_____probably no

(6)_____definitely no

31. There are two kinds of people in the world: the weak and the strong.

(1)_____strongly agree

(2)_____agree

(3)_____agree a little

(4)_____disagree a little

(5)_____disagree

(6)_____strongly disagree

32. I would take the drug if approved by my physician.

(1)_____definitely yes

(2)_____probably yes

(3)_____possibly yes

(4)_____possibly no

(5)_____probably no

(6)_____definitely no

33. The most important thing to teach children is absolute obedience to their parents.

(1)_____strongly agree

(2)_____agree

(3)_____agree a little

(4)_____disagree a little

(5)_____disagree

(6)_____strongly disagree

34. I try to avoid taking any medication that is not absolutely necessary.

(1)_____definitely yes

(2)_____probably yes

(3)_____possibly yes

(4)_____possibly no

(5)_____probably no

(6)_____definitely no

35. Prison is too good for sex criminals; they should be publicly whipped or worse.

(1)_____strongly agree

(2)_____agree

(3)_____agree a little

(4)_____disagree a little

(5)_____disagree

(6)_____strongly disagree

36. If I have a headache, I'll try to get rid of it by rest or fresh air before taking a headache remedy.

(1)_____definitely yes

(2)_____probably yes

(3)_____possibly yes

(4)_____possibly no

(5)_____probably no

(6)_____definitely no

37. Any good leader should be strict with people under him in order to gain their respect.

(1)_____strongly agree

(2)_____agree

(3)_____agree a little

(4)_____disagree a little

(5)_____disagree

(6)_____strongly disagree

38. People who come to rely on medications are not as "strong willed" as thos who can get by without them.

(1)_____strongly agree

(2)_____agree

(3)_____agree a little

(4)_____disagree a little

(5)_____disagree

(6)_____strongly disagree

39. No decent man can respect a woman who has had sex relations before marriage.

(1)_____strongly agree

(2)_____agree

(3)_____agree a little

(4)_____disagree a little

(5)_____disagree

(6)_____strongly disagree

40. Medicines may be necessay in some cases, but well-adjusted people are usually able to do without them.

(1)_____strongly agree

(2)_____agree

(3)_____agree a little

(4)_____disagree a little

(5)_____disagree

(6)_____strongly disagree

41. While you are a student at U. T., do you live:

(1)_____with you parents at home

(2)_____with your husband or wife

(3)_____in a university dormitory

(4)_____in a fraternity house

(5)_____in an apartment or rented room with one or more other people

(6)_____in an apartment or rented room alone

(7)_____other. Specify_____

APPENDIX C

PART II

SOCIOLOGY DEPARTMENT

UNIVERSITY OF TENNESSEE

The purpose of this study is to examine variations in human behavior as they are related to the learning process. This is not a test. There are a few questions of fact, but there are no "right" or "wrong" answers for most of the questions. For these the only "right" answer is your feeling or your opinion. Thus, your first impression is usually your best answer.

We assure you that all the information which you give will be kept strictly confidential. A code number will be assigned and this sheet removed before the data are examined. In this manner, your answers will not be associated with you in any way.

Read each question carefully and check only one of the several possible answers to each question, unless instructed to do otherwise. Please answer each question.

Thank you very much.

Your name _____

Number to be
assigned later

SOCIOLOGY _____; SECTION _____,

QUARTER _____; DAYS & HOURS _____.

1. Suppose that: (1) your essential needs are already cared for, (2) someone sends you a check for $100, and (3) provides that you use it in one of the ways listed below. Which would you choose? Check only one.

   (1)_____save it for future needs

   (2)_____have a party for some of your friends

   (3)_____use it for religious purposes or charity

   (4)_____buy books, paintings, or statuary

2. Which of the following do you believe to be the most important and desirable qualities in an adult?

   (1)_____to be honest and accurate

   (2)_____to be considerate and agreeable

   (3)_____to be obedient and respectful

   (4)_____to be alert and mentally inquisitive

3. Do you most respect a leader who in time of crisis: (check only one)

   (1)_____reduces tensions and seeks agreement among the differing persons

   (2)_____speaks out for a right and just solution to the problem

   (3)_____goes to a higher authority for guidance and help

   (4)_____looks for an intellectual or scientific solution

4. In discussion of a critical social issue do you think that a person should? Check only one.

   (1)_____say what he thinks is right

   (2)_____take a position which would not offend others present

(3)_____leave such issues to higher authorities in church or government

(4)_____hope that scientists will find a solution to the problem

5. If family obligations or other considerations did not restrict your choice, which of the following types of occupations would you prefer to spend your life in?

(1)_____one which permitted you to be thrifty and accumulate some wealth

(2)_____one which permitted you to have friendly, congenial contacts with other people

(3)_____one in which your rights and obligations were fixed so that you would not have to make decisions often

(4)_____one which would permit you to gain artistic or intellectual recognition

6. Among great figures in American history, do you have <u>greatest</u> admiration for:

(1)_____a military leader who takes the position: "Damn the torpedoes. Full speed ahead!"

(2)_____a national leader who takes the position: "Let us bind up the nation's wounds; let us have peace."

(3)_____a national leader who takes the position: "Only by devine guidance can this nation be saved."

(4)_____an intellectual diplomat who endeavors to out-maneuver his foreign opponents.

7. If you were given the choice of reading the biography of a great man, would you prefer to read about one who:

(1)_____was a great intellectual man, scientist, or scholar

(2)_____was a great business leader or tycoon

(3)_____was a great religious man or saint

(4)_____was a great compromiser, peacemaker, or adjuster of human situations

8. How much time did you average weekly studying sociology (excluding class time)?

(1)_____less than one hour

(2)_____one to two hours

(3)_____three to four hours

(4)_____five to six hours

(5)_____seven to eight hours

9. How regularly did you study for this course?

(1)_____studied some every day

(2)_____studied every other day

(3)_____studied once per week

(4)_____studied just before tests

(5)_____did not study regularly

(6)_____did not study

10. Did you study for this course?

(1)_____alone

(2)_____with "attenders"

(3)_____with "non-attenders"

(4)_____with both "attenders" and "non-attenders"

(5)_____did not study

11. Have you taken introductory sociology before this quarter?

(1)_____yes

(2)_____no

12. Your father's religious affiliation (preference) is/was?

(1)_____Baptist

(2)_____Methodist

(3)_____Presbyterian

(4)_____Episcopal

(5)_____Catholic

(6)_____Jewish

(7)_____Other

13. Would you say that your father's belief in his religion is/was?

(1)_____strong

(2)_____medium

(3)_____weak

14. Your mother's religious affiliation (preference) is/was?

(1)_____Baptist

(2)_____Methodist

(3)_____Presbyterian

(4)_____Episcopal

(5)_____Catholic

(6)_____Jewish

(7)_____Other

15. Would you say that your mother's belief in her religion is/was?

(1)_____strong

(2)_____medium

(3)_____weak

16. The most valuable talent a person can have is the ability to get along with others.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

17. One should be concerned more about one's achievements than about making friends.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

18. I believe that being able to make friends is a great accomplishment in and of itself.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

19. One should hold on to his opinions even though they may be radically different from those of others.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

20. You should always stand up for what <u>you</u> think is right.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

21. I would feel conspicious if I were not dressed the way most of my friends are dressed.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

22. It is all right to be an individual but I wouldn't want to be very different from those around me.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

23. I like to wear clothes which stress my individuality and are not those which everybody else is wearing.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

24. I'd rather be with a group of friends in my free time than to read an interesting book.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

25. As leisure-time activity I would rather choose something you do alone such as painting or photography rather than something you do with people such as play cards or talk.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

26. In bringing up children, parents should look at what other parents do with their children.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

27. In bringing up children, parents should stick to their own ideas about how they want their children brought up regardless of what others do.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

28. Since there are no values which can be eternal, the only real values are those which meet the needs of the given moment.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

29. I like situations which are demanding.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

30. I like situations which I have to struggle to master.

(1)_____strongly agree

(2)_____agree

(3)_____undecided

(4)_____disagree

(5)_____strongly disagree

NOTICE

NON-ATTENDERS ANSWER QUESTIONS 31-39, (following)
(add further comments bottom of last page)

ATTENDERS ANSWER QUESTIONS 40-46, (last page)
(add further comments)

Only Non-Attenders Answer Questions 31 through 39

31. Do you believe that you studied more for this class than you would have done if attending?

(1)_____yes

(2)_____no

32. Do you believe that you studied more for your other courses than you would have if you had attended this class?

(1)_____yes

(2)_____no

33. Do you believe that you spent more time in profitable reading (apart from assignments for this course)?

(1)_____yes

(2)_____no

34. Did you earn more at some paid occupation?

(1)_____ yes

(2)_____no

35. Did you spend more time in athletics or other activities?

(1)_____yes

(2)_____no

36. Do you believe you are capable of successful independent study in other fields than sociology?

(1)_____yes

(2)_____no

If yes, name the fields:

(1)_____

(2)_____

(3)_____

(4)_____

(5)_____

37. Do you believe you made as good grades on the tests as you would have made if attending?

(1)_____yes

(2)_____no

38. Did you form any friendships or engage in social activities of value because of the time you saved by <u>not</u> attending class?

(1)_____yes

(2)_____no

39. Knowing what you know now, if you had the choice to make again, would you choose to be a "non-attender"?

(1)_____yes

(2)_____no

Give reasons: _____

_____

_____

* * * * * * * * * * * * * * * * *

<u>Write at the bottom of the next page any further comments which you have</u>.

Only Attenders Answer Questions 40 through 46

40. Do you believe you studied sociology more hours than you would have studied if not attending?

(1)_____yes

(2)_____no

41. Do you believe you studied sociology more regularly than you would have studied if not attending?

(1)_____yes

(2)_____no

42. Do you believe that you made better grades on the tests than you would have made if not attending?

(1)_____yes

(2)_____no

43. Do you believe that the class lectures and discussions helped you to understand the material covered?

(1)_____yes

(2)_____no

44. Did the class meetings provide you with information, understanding, or points of view you would not otherwise have gained?

(1)_____yes

(2)_____no

45. Did you form any friendships or personal attachments because of attending class which were valuable to you?

(1)_____yes

(2)_____no

46. Knowing what you now know, if you had the choice to make again, would you choose to be an "attender"?

(1)_____yes

(2)_____no

Give reasons: _____

_____

_____

* * * * * * * * * * * * * * * * *

Add any further comments which you have.

APPENDIX D

CUTTING POINTS

In reducing the data to form 2 x 2 tables the responses were combined in conformity to similarities which were evident from a preliminary run showing the full distributions. The cutting point between the two categories is shown below for each table where applicable.

QI-5 First Category (1) and (2); Second Category (3) and above

QI-7 First Category 0 and 1; Second Category 2 or more

QI-10 First Category (1) (2) (3) and operates farm for share; Second Category (4) (5) (6) and farmer owner

QI-19 First Category (1); Second Category (2) (3) (4)

QI-20 First Category 10 or less; Second Category 11 or more

QI-21 First Category 1-3; Second Category 4 or more

QI-26 First Category (1) (3) (4); Second Category (2)

QI-41 First Category (1) (2) (3) (4) (6); Second Category (5)

QII-8 First Category (1) (2); Second Category (3) and above

QII-9 First Category (1) (2) (3); Second Category (4) (5) (6)

QII-21 First Category (1) (2); Second Category (3) (4) (5)