

THE CLASS OF 1961: CHANGING ATTITUDES AND VALUES

by

ARTHUR A. KATZ

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Signature of Author.....
School of Industrial Management

Certified by.....
Faculty Advisor of the Thesis

Professor Philip Franklin
Secretary of the Faculty
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

Dear Professor Franklin:

In accordance with the requirements for graduation,
I herewith submit a thesis entitled "The Class of 1961:
Changing Attitudes and Values."

Sincerely yours,

Arthur A. Katz/

ABSTRACT

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Arthur A. Katz

Submitted to the School of Industrial
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for the degree of Bachelor of Science.

Thesis advisor: Tom Lodahl

Title: Assistant Professor of Industrial Management

ABSTRACT

"When a college culture is well developed and when it differs from that of society at large, campus life itself may be the most influential educational experience the student undergoes. In the company of his peers he may experiment for four years with attitudes and values which were new to him as a freshman; and when he leaves, he may be a different person, not only in terms of knowledge but in terms of his approach to life."¹

What changes occur in M.I.T. students during their four years as an undergraduate? Using a report done by Leila Sussmann four years ago on the Class of 1961, then the freshman class, as a base, I have proceeded to identify the changes which have occurred and are occurring in the Class of 1961. Concentration was directed to the areas of attitude and value changes and morale. A secondary investigation was made into the attitudes and values of the students as they are now.

Questionnaires were sent out to 400 seniors. A 67% return was obtained. This was 29% of the Senior Class. Interviews were held with specific people from various courses to confirm a portion of the data.

The major conclusions reached as part of this study are: (1) Students have acquired broader interests especially in the social sciences and humanities. There has been a well defined shift of students from the School of Science to the School of Engineering to the Schools of Industrial Management and Humanities and Social Science. (2) The emphasis on grades has decreased, but there has been an increase in the interest in advanced education. Most occupational plans are still indefinite. A large number of students now feel that they want to work in the fields of teaching and research-teaching. (3) M.I.T. is difficult but not very difficult for most students. However, low-morale students find M.I.T. very difficult. Low-morale students in general live in dormitories and apartments and usually have one of the following characteristics: (a) They do not know what they will do after graduation and do not know if what they have learned can be applied to what they will be doing. (b) They are not in the course of study which interests them most and are faced with the prospect of doing something they do not like as part of their future occupation. In any case, these students usually have low esprit for M.I.T. and feel that their education is questionable.

¹Leila Sussmann, Freshman Morale at M.I.T., The Class of 1961, Cambridge, Massachusetts, Massachusetts Institute of Technology, March 1960.

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I. INTRODUCTION AND METHODS

"When a college culture is well developed and when it differs from that of society at large, campus life itself may be the most influential educational experience the student undergoes. In the company of his peers, he may experiment for four years with attitudes and values which were new to him as a freshman; and when he leaves, he may be a different person, not only in terms of knowledge but in terms of his approach to life."¹

In 1957 the Undergraduate Association at M.I.T. sponsored a study on the entering freshman class. This class is now the present Senior Class, the Class of 1961. The study headed by Leila Sussmann of Wellesley College attempted to determine what factors influenced the changes which they knew would come about in the Class of 1961 during their freshman year and then tried to determine exactly what these changes were.

Sussmann and her colleagues intensively interviewed an entire freshman section individually and as a group,

¹Leila Sussman, Freshman Morale at M.I.T. The Class of 1961, Cambridge, Massachusetts, The Massachusetts Institute of Technology, March, 1961.

and not only attended classes with the students, but also had several students keep diaries of their daily activities. At the end of the first term (January-February 1958), the entire section was reinterviewed to prepare a second questionnaire to be administered to the class. By the end of the second term, 140 students had been interviewed concerning changing attitudes, attitudes towards M.I.T., and several other subjects.

Since that time two reports have been published. The first in 1958 tabulated some of the early results and described toward what directions the study would develop.¹ The second report, published in March 1960, contained final results, conclusions, and recommendations.²

Sussmann concluded that M.I.T., like all professional schools, is performance-oriented, and that students who turned in a poor academic performance relative to their classmates also had lower morale than their class mates. The student's attitude toward M.I.T. before his entrance was also a very large determinant

¹Leila Sussmann and G.N. Levine, The Entering Freshman: Class of 1961, Cambridge, Massachusetts, Technology Press, 1958.

²Sussmann, Freshman Morale at M.I.T.

of morale. She believed that the greatest areas of improvement were due to living groups and faculty contact.¹

As a follow-up to the work done by Sussmann, I attempted to identify the changes which have occurred and are occurring in the Class of 1961 during four years at M.I.T. Concentration was directed to the areas of attitude and value changes and morale. A secondary investigation was made into the attitudes and values of the students as they are now.

I attempted to work in the area of attitude and value changes due to the interest I have manifested in the field since my entrance into M.I.T. I am especially interested in why changes have occurred and in the stability of the changes. While the actual study is not directly connected with my full program of study at M.I.T., I feel the experiences I have gained by doing independent and original work have greatly outweighed the extra time and effort spent on the thesis.

For the present follow-up study, questionnaires with cover letters were sent out to 400 Seniors. These seniors, all men, entered M.I.T. in September, 1957, and were then in the Class of 1961 scheduled

¹Sussmann, Freshman Morale at M.I.T., pp. 93-5.

to graduate in June, 1961. The only exceptions were architecture students who were on a five-year program. The group contained 540 students of whom 400 were picked. Nineteen questionnaires were returned as not received and 255 were received in time to use as part of this study. This was a return of sixty-seven per cent. Responses were punched on IBM cards. Interviews were held with specific people from various courses to confirm a portion of my data. (This is the source of the data used for my thesis.)

In her final report Sussman says: "As we have already indicated, the Freshmen were by no means prepared for this radical shift in the apportionment of their time...The discovery required a difficult adjustment. Not only did habits and patterns of living need to be reorganized sometimes drastically but in many cases an emotional adjustment had to be made as well."¹ This adjustment process is a continuing one, and a large amount of the change that a student undergoes does not take place during his first year at college. The question now arises: what changes have taken place in the Class of 1961 since their freshman year and what has influenced these changes. Along with this it can be asked, what

¹Sussmann, Freshman Morale at M.I.T., p. 50..

is the student like after four years of M.I.T. How is his morale and what are his aspirations?

The major conclusions reached as part of this study are: (1) Students have acquired broader interests especially in the social sciences and humanities. There has been a well defined shift of students from the School of Science to the School of Engineering to the Schools of Industrial Management and Humanities and Social Sciences. (2) The emphasis on grades has decreased, but there has been an increase in the interest in advanced education. Most occupational plans are still indefinite. A large number of students now feel they want to work in the fields of teaching and research-teaching. (3) M.I.T. is difficult but not very difficult for most students. However, low-morale students find M.I.T. very difficult. Low-morale students in general live in dormitories and apartments and usually have one of the following characteristics: (a) They don't know what they will do after graduation and don't know if what they have learned can be applied to what they will be doing. (b) They are not in the course of study which interests them most and are faced with the prospect of doing something they don't like as part of their future occupation. In any case, these students usually have low esprit for M.I.T. and feel their education is questionable.

In explaining this work, I will first go through the questionnaire explaining the results. This will lead into the areas of morale and attitudes and differences in attitudes among low and high morale students.

The appendix contains a sample questionnaire, and a straight tabulation of the responses. Included also are listings of the completed questionnaires as coded and additional work done with the students' answers. Notable among this information are course listings and course deviations from the survey results.

II. RESULTS

Question 1. About how many hours a week do you spend on your academic work at M.I.T. outside of attendance at classes and assigned lab work?

under 10 hours	12	5%
10-15	37	14.5%
16-20	42	16.5%
21-25	45	17.5%
26-30	48	19%
31-35	26	10%
36-40	20	8%
41-45	10	4%
over 45	11	4.5%

Median time devoted to studying is 24.5 hours a week. Four years ago 64% of the students spent over 30 hours a week studying against 26% now. In 1958, average study time was 32 hours a week. In the present 25 hour per week study period the student can accomplish more because of more efficient study habits. There was a feeling during the student's freshman year that with the immense amount of work which had to be done, a decision had to be made regarding which work to finish and which work

to leave undone.¹ The average student now finds time not only to finish his work, but also to work in advance. However, the same complaint is still heard of not being able to do that 'extra' amount when a special interest arises. The student who wants to go off on a tangent finds little time for it. This is not because the time does not exist. It does, but the student puts his own imaginary ceiling on the time he spends doing his necessary work. In time of need, the student amazingly finds available time, but by then the pressure is usually at a level where only a certain amount of the work will get done anyway.

Question 1 b. Do you take part in extra-curricular activities?

yes	205	80%
no	50	20%
total	255	

Question 1 c. How many hours a week do you devote to extra-curricular activities?

0 hours	49	19%
1-2	27	10.5%
3-5	73	28.5%
6-8	29	11.5%

¹Sussmann, Freshman Morale at M.I.T., p. 50.

9-12	39	15%
13-16	22	8.5%
17-20	8	3%
over 20	5	2%
total	252	

The percentage of students participating in extra-curricular activities has dropped from 94% to 80%. Average time spent has declined greatly from fifteen hours to six hours a week per student.

When students first came to M.I.T., they were all accustomed to participation in extra-curricular activities. Before entering, 97% said they would continue to participate. After eight months had passed, this percentage was down an additional 3%. Students found they did not have the time to participate and were incapable of doing so. Others found that by not taking part in outside activities they had more time to themselves.

A constant re-evaluation of time must occur for each student. His daily life is run on a timetable, for there is no other way for the average student to do everything he wants to do since the time shortage is acute and the student has a full schedule.

The extra-curricular level differs for living groups. Fifty per cent of those students living at home spend two hours or less a week on activities. This is only fifteen per cent for fraternities, twenty-four per cent for dormitories, and thirty-six per cent for apartment dwellers.

number of extra-curricular hours per week	0-2	3-5	6-12	over 12
home	50%	21%	29%	--
fraternity	15%	29%	40%	16%
dormitory	24%	34%	24%	18%
apartment	36%	28%	27%	14%

Students living at home have trouble participating in activities because of other obligations. Besides travel time to school each day and family and community obligations, the student must either stay at M.I.T. or travel back to participate in activities.

Before continuing it should be remembered that fraternity men in listing activities do list time spent on house duties. This time has decreased tremendously in four years because of the time needed for pledging freshman year. These extra duties have become part of the fraternity men's lives. and are regarded almost as daily chores. This activity is something neither apartment nor dormitory men concern themselves with. Apartment dwellers spend more time doing the same type

of work which is considered 'extra' by fraternity men as part of their daily chores. This period of time usually amounts to at least ten hours a week for the average apartment dweller. It is surprising that such a high percentage of them engage in extra-curricular activities.

Activity-wise it seems there is not too great a difference between fraternities and dormitories but one does exist, for it is in the dormitories that the largest percentage of students who do not engage in activities live. Also, the students spending the greatest time in activities are for the most part dormitory residents.

The amount of time spent on activities is non-linearly dependent upon the number of hours the student spends on his studies.

Extra-curricular activity hours per week	0-2	3-5	6-12	over 12
amount of study time per week				
over 30 hours	35%	27%	21%	17%
25-30	23%	37%	31%	9%
20-25	31%	24%	26%	19%
15-20	24%	38%	31%	7%
10-15	37%	7%	34%	22%
under 10	27%	55%	9%	9%

Those students who spend less than ten hours a week studying allow little time for activities because of disinterest not just in activities but in school. There is also the self-imposed ceiling discussed before which the student has and tries to keep at a respectable level. 56% of the students spending 15-20 hours a week on their studies spend over six hours a week on activities compared to only 40% of the students in the other categories. A large portion of these students are in Courses XIV and XVI. Time spent in activities is not very closely related to study time. Those students who spend more than thirty hours a week studying still find the same amount of time to spend on activities as other students.

Taking a look at activities as a whole, the M.I.T. students represent themselves very well in comparison to students at other campuses both in the number who participate and the average time spent per student.¹

Question 2. How difficult are your studies at M.I.T.?

very very difficult	4	1.5%
very difficult	34	14%
difficult	135	53%
not too difficult	76	30%
easy	6	2.5%
total	256	

¹Philip Jacob, Changing Values in College, New York, Harper, 1957.

The average student finds M.I.T. difficult but not very difficult. Difficulty is partially a state of mind. The student is of the opinion that if he spends the time on the work, he can do it. He no longer possesses the sense of futility he had as a freshman. The work is no longer impossible; it just takes too much time. The longer the student spends studying, the more difficult he tends to view his work. The person who finds school very difficult spends about thirty hours a week studying. If he views the work as only difficult, he averages about twenty-five hours a week; and if he views it as not difficult about twenty hours a week..

Amount of study time hours/week	under 10	10-15	16-20
difficulty of studies			
very difficult	3%	3%	12%
difficult	5%	12%	18%
not too difficult or easy	6%	26%	19%
Amount of study time hours/week	21-35	36-40	over 40
difficulty of studies			
very difficult	64%	6%	12%
difficult	49%	8%	8%
not too difficult or easy	40%	9%	--

The difficulty the student experiences bears a mild inverse relationship to cumulative rating.

cum rating	under 3.0	3.0- 3.4	3.5- 3.9	4.0 and over
very very dif- ficult and very difficult	20%	20%	43%	17%
difficult	18%	26%	27%	37%
not too dif- ficult and easy	9%	41%	23%	27%

Again as was found four years ago, students in each range of grades belong to one of two categories. There are those for whom the work is not too difficult and those who find the work very difficult and must work very hard to keep up. Students who have cums of 3.5 and over and find the work very difficult spend an average of thirty-five hours a week on their studies.

Question 3 a. Where do you live?

home	28	11%
dormitory	106	41.5%
fraternity	64	25%
apartment	58	22.5%
total	256	

In the four-year period there has been a move from dormitories and fraternities to apartments. 27% of all

fraternity men and 20% of all dormitory men have moved into apartments. Fraternity men have kept more contact than dormitory men with their previous living groups.

Fraternity men move for two main reasons: either their house was too crowded for them, or they felt that they did not want the responsibilities and/or lack of freedom that they would have if directly connected with their fraternity house.

However, most dormitory men moved because they were dissatisfied with dormitory living. Dormitories meet neither the needs of the student who wants to work very hard nor the needs of those who want to have a collegiate good time.¹ Students want the greater independence afforded them by apartment living. By making a move they must sacrifice a certain amount of security. These men felt that the gains far outweighed the insecurity that would result. These men are quite different from other groups of men at M.I.T.; their morale is lower than that of the average Tech student, and they are more mature. Their participation in activities is about average. They have had to make a mature decision concerning movement out of the dormitory system. They have had to spend over ten hours a week on activities like

¹Sussman, Freshman Morale at M.I.T., p. 40.

cooking, cleaning, and shopping--activities which had previously been done for them. They feel that they can sacrifice this time for the extra independence that they are getting. Their morale is low, for these men are dissatisfied with what they are doing and are looking for a more liberal background which will be dissociated from M.I.T. and the M.I.T. atmosphere.

Question 4a. What is your cumulative rating?

2.5-2.7	10	3%
2.8-2.9	19	7.5%
3.0	16	6%
3.1	21	8%
3.2	17	6.5%
3.3	10	4%
3.4	23	9%
3.5	14	5.5%
3.6	11	4%
3.7	19	7.5%
3.8	11	4%
3.9-4.0	14	5.5%
4.1	10	4%
4.2	13	5%
4.3-4.4	16	6%
4.5-	13	5%
4.6-4.7	9	3.5%
4.8-4.9	5	2%
total	251	

The average cumulative rating is slightly below 3.5 and average for M.I.T.

Question 4 b. Is your cum indicative of your knowledge and what you have gained as a student?

yes	99	41%
no	143	59%
total	242	

There are two groups of students at M.I.T. One group feels that scholastic achievement and the knowledge gained from Tech directly, through courses taken, are the only important aspects of a college education. Hence, for them there is no room for social experience or development. The second group is more socially oriented. Their more rounded view of education is not held by a majority of the Class of 1961 which indicates that something may be missing in the college experience of the majority. Apartment dwellers, almost as a whole, have the second concept implanted in their minds. Their additional maturity can be seen from their answers to questions like 5 a and 5 b. The two groups mentioned above were differentiated by checking the importance given to both intellectual values and social values in question 5 a.

Question 5 a. How important personally are each of the following in your career at M.I.T.?

	very im- portant		somewhat important		not im- portant	
achieving good grades	96	38%	136	53%	22	9%
achieving distinc- tion in extra activities	31	12%	94	37%	131	51%
making close friends	26	10%	122	48%	106	42%
Getting intellec- tual enjoy- ment out of my work	155	61%	89	35%	11	4%
having fun generally	56	22%	150	58%	49	20%
getting a thorough preparation for my future occupation	173	68%	78	30%	4	2%
preparing for living a full life	150	58%	71	28%	29	12%

When the students were asked the same question four years ago, the distribution obtained was like this:

achieving good grades	80%	20%	--
achieving distinction	17%	61%	22%
making close friends	65%	33%	2%
getting intellectual...	75%	24%	1%
having fun...	23%	60%	17%
getting a thorough...	95%	5%	--

Question 5 b. Which of the above is most important?

getting good grades	9	3.5%
achieving distinction...	2	...
making close friends	7	2.5%
getting intellectual enjoyment...	43	17%
having fun generally	4	1.5%
getting a thorough preparation...	80	31%
preparing for a full life	101	39.5%
total	246	

Students as a group have shifted the amount of importance placed on the various items above in all cases. On achieving good grades, the shift has been startling. The average student has shifted from an absolute importance to an intermediate state. Has something else been substituted as being presently more important than grades?

Low performers are not as much concerned about their grades as higher performers. The students who have performed lower believe grades are only somewhat important.

Cum rating	under 3.0	3.0-3.4	3.5-3.9	4.0-4.4	4.5 and over
Importance of grades					
very important	22%	28%	40%	47%	60%
somewhat or not important	78%	72%	60%	53%	40%

This attitude has arisen in many cases because the student has been unable to make high grades with a normal amount of work and so has shifted his emphasis to allow for the fact that he has not been able to get the high grades that he desired.

When the students first came to M.I.T. as freshmen, they had nothing to base their future goals on except, of course, past experience. They were coming to college to prepare themselves for their future occupations whatever they would turn out to be, and as in high school where they had received good grades and enjoyed their work, they expected a partial transfer of these feelings to M.I.T.

Many had heard of the lasting friendships formed in college and expected that this would be the place where they would form their own lasting friends. In high school the average student had spent over twenty hours a week on extra-curricular activities. Because of his drive and initiative he had overcome challenges and achieved distinction in most, if not all, of his activities. Because this challenge was, in part, more important than school work, the student maximized its importance. Naturally, this feeling continued in college..

I feel that the views that the student has acquired as a part of the college community are more realistic, and that the student has found that everything has its place. Likes and dislikes have been toned down to accommodate this new feeling.

The emphasis on good grades decreased, for many students found that they could not keep up with other students. With experience the average student found that he was that--average! Therefore, his values had to change. This change was in part a change in the student's self-evaluation and a rationalization of the existing circumstances. The change occurred in all groups, even in students who were planning to go on to graduate school and needed good grades to be accepted. Question: Are you going to graduate school?

importance of good grades	very	somewhat	not
yes	42%	55%	3%

The interest in grades declined for other reasons. In some respects, a lesser interest in grades is part of a more mature view of college. The student takes an overall outlook on what he has done and places things differently in perspective.

Four years ago a tremendous stress on grades, according to Sussmann's study, existed. Now, the student is not as heavily grade-oriented as he used to be,

as can be seen from a comparison of the importance of grades over the four-year period. This change in emphasis from grades to knowledge has been in part what M.I.T. is trying to accomplish. The percentage of students to whom grades have an undue importance is still high.

The importance of distinction in extra-curricular activities has also declined. However, the importance to some groups of students has risen. 19% of the students in Course VIII as compared with 12% of the students as a group have rated it as very important. A feeling that gaining distinction is very important indicates that these students still feel the need to prove themselves, not so much in the ability of their own work, but as people. These students still feel insecure in their relations with other students and continue to feel the need to prove themselves to their peers. The idea that extra-curricular activities at M.I.T. are a major goal and not a side effect of being in the community is stilted and shows that something is lacking in their concept of education.

The M.I.T. student feels that making close friends is a by-product of living in his environment. Other objectives have been substituted as a goal of college experience. The average student has not made many close friends. 43% of the class has less than five close friends. In this case reality has met the thought and

changed it. Those students with only one or two friends do attach a greater importance to the question, showing that they would like to make more close friends and are sorry that they have not been able to do so while in college.

The student still feels it is important to get a sense of intellectual enjoyment from his work. However, science and engineering students differ from non-science and non-engineering students in their choices. The science-oriented student depends greatly on intellectual enjoyment as a stimulus for his work. From talking with these students it seems that many of them feel that they are not involved to any large extent in actual enjoyment of the work that they do. The overall importance of this question has not decreased greatly, for those students for whom it decreases usually leave M.I.T. for pursuits better fitted to their beliefs.

74% of the students with cums over 4.0 against 61% of the students as a group said that intellectual stimulation was very important in answer to question 5 & showing that high performers are more interested in their work and receive more intellectual stimulation from it than low performers.

The importance of receiving a thorough preparation for a future occupation has decreased. What has caused

this decrease in importance? The student ideally comes to the Institute to receive a thorough preparation for a career; yet the answers that they gave to question five show that over 30% of the students feel a thorough preparation is only somewhat important. A shift in the pattern of thinking of the student has occurred, as illustrated by his broader feelings. Those students for whom the relative importance has declined are getting a better perspective on their work and goals. However, a percentage of the group who answer not too important belong to a group of students in science and engineering who indicate by their choices in other questions that they are more interested in things other than science and engineering (for example, humanities or social sciences), and these students are not getting the thorough preparation needed to go on to another field of work. Hoping to possibly switch, they have minimized the importance of training.

The question concerning preparation for leading a full life was not on Sussmann's original questionnaire; therefore, a comparison of changes cannot be made. However, it is hard not to wonder about what is occurring in the student's mind. Here we are talking about maturity.

Shifts in answers to the question concerning which of the objectives in question 5 b is most important have occurred. Obtaining good grades has decreased in importance from 11% to 3.5%. When the question was asked four years ago, 69% of the students chose the alternative of receiving a thorough preparation for a future career, as compared to 30% now. This question and the one concerning a full life include 70.5% of the students. The shift which has occurred is therefore defined. Because the latter question was not on the original study, valid doubts are raised. They will be discussed later in this report.

How mature are M.I.T. students? M.I.T. is unique among many undergraduate schools. M.I.T. freshmen have more independence than freshmen in most other schools.¹ In entering the college community certain responsibilities are thrust upon the student. The student who has not yet grown up is faced with an immediate problem that he must solve and usually does. Problems are solved in different ways and, of course, have different outcomes. How many students have matured to the point where they can view things in their proper perspective and attach the correct importance to each? Those students who have matured to this point have achieved what I shall call a "full life concept." When asked how important different

¹ Sussman, Freshman Morale at M.I.T., p. 93.

goals are and given "preparing for living a full life" as one of the choices, 58% of the students answered very important, 28% somewhat important, and 12% not important with 2% leaving the answer blank. Thus, 12% of the students see no importance whatsoever attached to this concept.

When asked from a list of goals which was the most important 39.5% said "preparing for a full life" and the rest gave other answers. Two other main responses were obtaining intellectual enjoyment from work, and getting a thorough preparation for a future occupation. Both of these are part of a "full life concept." Thus, approximately 60% of the M.I.T. Senior class do not have the broad perspective they seem to have.

Question 6 c. Have you changed courses since your freshman year?

yes	114	45%
no	142	55%
total	256	

Question 6 a. What course are you now registered in?

Question 6 b. What course were you registered in freshman year?

Course number		NOW	FRESHMAN YEAR		NUMBER WHO STAYED	
I	6	2.5%	3	1%	2	.8%
II	22	8.5%	19	7%	11	4%
III	12	4.5%	3	1%	2	.8%
IV	3	1%	5	2%	2	.8%
V	16	6%	14	5.5%	8	3%
VI	43	17%	58	23%	29	11%
VII	5	2%	3	1.5%	...	...
VIII	39	15%	56	22%	31	12%
IX	...	...	3	1.5%	...	...
X	26	10%	37	10.5%	23	9%
XII	5	2%	2	1%	2	.8%
XIII	1	...	...	...	...	...
XIV	6	2.5%	1	...	1	...
XV	27	10.5%	14	5.5%	12	4.5%
XVI	13	5%	20	8%	11	4%
XVIII	15	6%	13	5%	7	2.5%
XX	4	1.5%	1	...	1	...
XXI	12	4.5%	...	...	...	...

All percentages are based on total population.

Course number	NUMBER LEFT		NUMBER NEW	
I	1	...	4	1.5%
II	8	3%	11	4%
III	1	...	10	4%
IV	3	1%	1	...
V	6	2.5%	8	3%
VI	29	11%	14	5.5%
VII	3	1%	5	2%
VIII	25	10%	8	3%
IX	3	1%	...	...
X	14	5.5%	3	1%
XII	...	...	4	1.5%
XIII	...	...	1	...
XIV	...	...	5	2%
XV	2	.8%	15	6%
XVI	9	3.5%	2	.8%
XVIII	6	2.5%	8	3%
XX	...	...	3	1%
XXI	...	...	12	4.5%

All percentages based on total population.

The main switching of courses was from Electrical Engineering, Physics, and Chemical Engineering to Industrial Management, Humanities, Electrical Engineering, and Mechanical Engineering and Metallurgy.

Students switch courses for many reasons. It is my impression from talking with students who have switched courses that the two main reasons are: (1) they do not like what they are doing and have found that something else interests them more or (2) they feel that what they are doing is too difficult and they want an easier way out of M.I.T.

Most of the switching caused by the first reason takes place within the first two years at M.I.T. as the student discovers more about himself and his capabilities.

As an example a majority of the late changes into Industrial Management have resulted from the second reason. The grades of those students who have made late changes into Industrial Management, being lower than the average grades in the course, indicate that these students are not as concerned with what they are learning as the average student in Industrial Management. There has been a shift from science to engineering to Industrial Management and to Humanities and Social Sciences. The shift is not as pronounced as it might be, because I feel that as students change their plans about the work they want to do, many leave M.I.T. for schools better suited to the type of education they want.

45% of the students changed courses after entering M.I.T. Although this percentage is large, the Institute recognizes that so many course changes are necessary because the students are maturing and their ideas are changing. Therefore, M.I.T. makes it possible for the student to change his mind concerning his major course of study without any difficulty until the student's junior year.

Question 7. Of the following learning situations, which do you prefer?

One in which the instructor assumes primary responsibility for showing me what must be learned	143	56%
One in which the primary responsibility for selecting what is important is given me with the instructor available for guidance when needed	107	44%
	250	

The trend of answers over a period of time is very interesting. When the question was first asked, 32% of the students wanted the instructor to assume primary responsibility. Six months later, 66% wanted the instructor to assume primary responsibility. Now the percentage is down to 56%.

On his arrival at M.I.T. the student realized the tremendous difficulty in getting something done, and a great deal of dependency developed. Since that time, however, the development has had the opportunity to reverse itself. A large percentage of the students

still depend on someone to tell them what is important. It is difficult to decide whether or not one is ready for independence. Some inert fear has been instilled in the student against independence and four years of college have not decreased it appreciably.

An explanation of this fear may lie in consideration of academic self-responsibility. M.I.T. is like a graduate school in many respects , especially with regard to the amount of independence it gives to its students and to the amount it expects in return. The student is caught off guard at first, but even after accepting this personal responsibility, the student remains very reluctant to accept any great amount of academic self-responsibility. This reluctance grows out of his early college experiences with such self-responsibility.

Question 8. How interested are you in the following?

	extremely		quite		somewhat		not	
mathematics	51	20%	97	38%	86	34%	22	8%
physical sciences	76	30%	107	42%	57	22%	16	6%
biological sciences	19	7%	37	14%	57	22%	140	59%
engineering	68	26%	81	32%	75	29%	82	32%
social sciences	35	14%	78	31%	104	41%	37	14%
humanities	53	21%	95	37%	84	33%	22	8%

Answers given to question 8 four years ago:	extremely	quite	somewhat	not
mathematics	61%	23%	6%	...
physical sciences	64%	30%	5%	1%
biological sciences	4%	16%	47%	33%
engineering	46%	31%	19%	4%
social sciences	4%	20%	51%	25%
humanities	9%	28%	49%	14%

Interest has declined in mathematics, physical sciences, and engineering and has risen in social sciences and humanities.

The disproportionate drops in the sciences and engineering were not expected. Four years ago 94% of the students interviewed were more than somewhat interested in mathematics. Now the percentage is down to 58%. In the physical sciences there is a similar drop--from 94% to 72%. There is some logic in these changes. Those students whose future occupations would not deal with either science or mathematics lost interest. But M.I.T. is a technical institution. There must be a conflict of interest between the school and a portion of the student body if the students are not especially interested in mathematics or science after four years of training in these courses. Engineering declined from 77% to 58% in the number of students more than somewhat interested. From the above tables we see that

engineering has not declined in importance as much as mathematics or science. There has been a shift in importance from the sciences to engineering and from engineering to liberal arts. Along with this change many students have left the Institute, but those who have stayed, although their interest has waned, have done so because they believe in the importance of a technological background just as they believe in a liberal background. After graduation their lives will be intimately connected with technology and at M.I.T. they believe that they will have the opportunity to get a good background in both types of education.

Why has this change occurred? It is easily explained if we look at the incoming freshmen. A large number of them were typical of the following description. In high school they had not thought too much of what they wanted to do. They expected to go to college, and because of a more favorable leaning toward science and mathematics than toward English or history, they chose a school like M.I.T. As shown by the fact that 45% of the students switched courses at M.I.T. a large portion had not determined their interests or leanings as yet. Usually they had no opportunity to take any courses in high school in the humanities and social sciences which were of any recognizable caliber. Entering M.I.T., their values still not firmly set but subject to change, the student was required to take courses in science

and math and in humanities. For most students this was their first experience with all three fields on an advanced level. Some students realized then that their interests were in technical fields. High interest and good marks in mathematics did not continue once many students were faced with theory. Realizing their displeasure, these students arranged their courses to minimize what they didn't want. Thus, their primary interest changed to either engineering, management, or liberal arts.

Most of those people (61%) who were not interested in engineering expressed their strongest interest in science and mathematics. Those students expressing a strong interest in the social sciences and humanities indicated a fairly strong interest in engineering, but showed less interest in science and mathematics.

The switch to the social sciences and humanities is spectacular. As the students' attitudes change those who are pulled away from science and engineering will transfer to a school better suited to their interests. We see that 27.5% are more interested in the humanities or social sciences than in engineering, science, or mathematics. However, only 17.5% of the population is registered in the former courses. The

remaining people, 10% of the sample, have prepared for occupations or are in fields which they can not serve in their best stead. These students are sure that they do not know what they want and are less sure of their future status than they should be at this point in life. Those in this 10% have low morale because of their predicament.

Question 9. Concerning morale on the whole would say at M.I.T. you were:

very happy	56	22%
fairly happy	141	55%
not so happy	44	17%
very unhappy	11	4.5%
total	252	

The answers to the 1958 survey show:

very happy	24%
fairly happy	63%
not so happy	11%
very unhappy	2%

77% of the students interviewed thought that they were happy at M.I.T. compared to 87% four years ago. A valid comparison cannot really be made between the two surveys because a large number of those unhappy four years ago have probably left M.I.T. for an institution more to their liking. The problem of morale will be more fully discussed later.

Question 10. Which of the following statements reflects most closely your opinion concerning the relationship of humanities courses to your professional life.

I think the courses are very useful.	137	54%
I think the courses have some use.	75	30%
I think the courses have little or no use.	37	14.5%

The percentages of people who answered with the extreme choices went up in the four-year period from 48% to 54% and from 5% to 14.5%. Many of those students who felt humanities courses would be of little or no use commented that this did not mean that they did not like humanities. The meaning of the interviewer's question was misinterpreted by many students. In many cases these students did not consider all humanities and social science courses at M.I.T., but rather the four freshman and sophomore required courses: 21.01, 21.02, 21.03, and 21.04. Proof of this misinterpretation lies in the fact that 20% of the people said humanities or social sciences interested them most in answer to question 8 a. The largest percentage of students who feel that humanities courses are not useful are in the sciences--particularly in courses VIII and XVIII.

Question 11. People differ in the kinds of intellectual experiences they enjoy. Which of the following gives you greater pleasure?

An experience such as suddenly seeing the solution to a mathematical problem, or grasping a relationship for the first time.	135	53%
An experience such as figuring out a new and more efficient way of getting something done.	111	43%
total	246	

The percentage of students who prefer the theoretical to the applied side of scientific activity has decreased from 69 to 53%.

Question 12 a. In the light of your experiences here, if you were applying for entrance to college all over again, would you come back to M.I.T.?

yes	178	70%
no	75	30%
total	253	

Question 12 b. If no, what school would you go to (write the name or type)? Schools like:

University of Vermont or Boston University	8	10%
Harvard, UCLA, Columbia	44	59%
Worcester, R.P.I., Cal Tech,	10	13%
Other	10	13%
Total	72	

After a four-year period at M.I.T. 30% of the graduating class feel that they would not return to M.I.T. This answer required much thought for the individual had to decide where he would go to college if he did not choose M.I.T.

What other characteristics, besides a prevalence of low morale, does the group who would not return to M.I.T. possess? More students in the group who live at home would not return to M.I.T. than students in any other group. 39% of them would not return. In mentioning other choices 90% of this group would not return to a school in the Boston area. What these students want is a release from their families--more independence. 26% of the apartment dwellers, 29% of dorm residents, 25% of the fraternity men would not return to M.I.T.

The lower a man's cumulative rating, the less chance that he will return to M.I.T.

Cum	under 3	3.0-3.9	over 4
Would you return?			
yes	62%	67%	79%
no	38%	33%	21%

These responses were expected. The lower one's grades the more loyal one feels toward his school. However, 62% of the class in the lower quarter would return to M.I.T. This high percentage shows that a

large portion of the student body feels that there is a lot more to M.I.T. than grades and they are willing to back the school. Regardless of their grades the students believe that they have received a good education, the best available, and would not sacrifice it for better grades at another school.

All of the students who feel that the humanities and social science courses are the most important courses and who are not enrolled in these courses would not return to M.I.T. This attitude will be discussed later.

The more time a student spends in activities, time over five hours a week, the less likely he is to return to M.I.T.

Would you return to M.I.T.?	Hours per week in extra activities			
	0-2	3-5	6-12	over 12
yes	74%	87%	68%	40%
no	26%	13%	32%	60%

For the student who spends more than five hours a week on activities, M.I.T. may not be answering the need for him that his activities are. Therefore, he puts his time and energy on his activities rather than his work as he did in high school.

Of those students who would not return to M.I.T., only 13% would go to a technical school like M.I.T.,

a school like Worchester Polytechnic Institute, California Institute of Technology, or Renssalaer Polytechnic Institute. The remaining 87% would go either to a strict liberal arts college or to a university like Harvard which affords the student a more balanced education in the humanities and sciences.

Question 13. In general is M.I.T.

better than expected	71	28%
about as expected	134	52%
not as good as expected	45	18%

This question asks the student to make a choice as to whether or not he has liked M.I.T. In general, it was difficult, if not impossible, for students to form judgments concerning M.I.T. just after entering the Institute. The student's answer to question 13 is telling in effect whether or not he feels that he has gotten enough from M.I.T. Clearly 18% of the graduating class does not feel that they have gotten enough from M.I.T. 28% of the class feels that M.I.T. gave them more than they asked for, and they have no doubts about their choice to come here. The 52% of the group who are in the middle are uncertain about just how they feel, but they believe that they have made a worthwhile investment in their futures.

Question 14. Regardless of your grades, are you satisfied or dissatisfied with the amount you have learned?

Satisfied	148	57%
Dissatisfied	105	43%

This question is, to a certain degree, dependent on grades as shown by the following table:

Cum	under 3	3.0-3.9	over 4
Satisfied	48%	59%	62%
Dissatisfied	52%	41%	38%

Even though choices are grade-dependent, 38% of those persons with cums over 4.0 are dissatisfied with what they have learned. Looking back over their college careers, students feel that they did not work as hard as they should have and would like to have another opportunity. Those students with low morale blame the school for it, and 67% are dissatisfied with what they have learned. To them, the school has not done a satisfactory job.

76 of the students who are dissatisfied with what they have learned also feel that their marks are not indicative of the knowledge they have gained. 51 of the 76 students have low morale, possibly because they are at a loss of how to determine their futures.

Of the students interviewed, 72% feel that the work load is heavy but that what they are receiving in return is worth it. Half of the remaining group believe that not only is the work load too heavy, but also it is at times a superhuman task.

Question 15. Which of the following statements most nearly expresses your own view?

The workload here is heavier than it should be.	39	15%
The workload is heavy, but it has to be, and I'm willing to go along with it.	183	72%
The workload isn't too heavy.	31	13%

When questioned again about the workload and its value, the following answers were received:

Question 16. Which of the following statements reflects best your own view?

I'm not having as much fun as I ought to be having at my age and I'm not sure it's worth it.	36	14%
I am working hard, but I enjoy the work very much.	72	28%
I am working harder than I really like to, but I feel it is a worthwhile investment in the future.	122	58%
total	230	

It would seem that those students who feel the work load is too heavy would also think the work is not

worth the time spent on it. However, when a cross tabulation between the two questions is made the following results (based on entire population) are obtained:

work is	not worth it	hard but enjoyable	hard but investment
work load is			
too heavy	5%	2%	8%
heavy but willing	7%	25%	43%
easy	3%	4%	3%

Of the fifteen per cent of the students who believe that the work is difficult and involves too much time, only one-third of them feel that the workload itself is too hard. The other two-thirds believe either that the workload justifies the end result or that it isn't difficult. The students are not certain whether all the time and energy they are investing will be worth the effort. 8% of the students felt that while the work was very heavy, possibly too heavy, they were investing in the future and its promises. Not a very large percentage of the students are going through the Institute with the idea of having a good time. To some students happiness is secondary while they are in college. From the cross tabulation, it appears that half the class is investing in the future whether they like the work or not.

Here again the underlying theme is: here at M.I.T., while I may not like what I am doing very much, and I am not sure exactly how I will use what I am learning, I believe it is a good investment in the future.

A large number of students do not like the work that they are doing nor do they get any sort of intellectual enjoyment from it, although they constantly spend time at it.

The work load is.	too heavy	all right	easy
In general M.I.T. is			
better than expected	1.5%	21%	4%
about as expected	7%	44%	5%
worse than expected	7%	7.5%	3%

When we compare the work load with what the student thinks he has gotten from M.I.T., we find a positive correlation. This correlation leads one to believe that possibly the perception of the total worth of M.I.T. is determined by the student's attitude to his workload.

Question 17. Whether you have made definite plans or not, which type of occupation are you planning to enter or leaning toward most heavily?

OCCUPATIONS	Present study		1958 study
Engineer	93	40%	57%
Scientist	62	24%	34%
Teacher (or teaching-researcher)	32	12%	1%
Industrial Management	43	17%	5%
Architect	4	1.5%	
Physician	7	3%	
Actuary	4	1.5%	
Lawyer	7	3%	
Other	6		
Total	258		

There has been a shift from science and engineering to teaching and research and to industrial management. This shift was indicated before by the changing interest from science to engineering to management. By looking at the results obtained from the next question it is seen that 66% of the graduating seniors have either made up their minds as to future occupations since the start of college or are still undecided. Four years ago, when asked, 81% of the sample stated that their plans for their future occupation were definite. However, for 66% of the sample the past four years have been decision years. The largest decision-making times were (1) between freshman and sophomore years when the

student had to decide on a major course of study and (2) this past year when the student had to decide what to do after graduation. At least thirteen percent of the Senior class has no definite plans as to occupation are are still in a state of flux.

Question 17 b. When did your plans become definite about this occupation?

Number of years ago		
0	39	15%
1	15	6%
2	57	22%
3	24	9.5%
4	25	10%
5	21	8%
6	10	4%
7	7	3.5%
8	7	3.5%
9	13	5%
total	218	

Are the students who are going into teaching and teaching-research work happy with what they are going to do or is it an excuse? Of the men going into teaching, 62% of those students wanting to teach humanities are unhappy possibly because they feel that teaching is not what they want to do, but rather all

that they can do. Scientists and engineers going into teaching do not seem unhappy because less than ten percent of this group have low morale.

A problem arises when we see a large group of students planning a career in industrial management. Not all of these students are in Course XV. The question then is: are these students capable of industrial management work or are they incapable of any other kind of work? Because of their low morale, these students' motives for going into industrial management are questionable.

Among those going into engineering the stress is on research and development work; 59% as opposed to 49% four years ago. This stress implies the possibility that this block is composed of students who have switched from the sciences to engineering. The drop in students interested in the administrative function indicates that possibly those interested have switched to industrial management. By personally talking with these students, I have found that some of them recently decided that administration was what they wanted, but realized it too late to switch into management and minor in engineering. For this reason they majored in engineering and minored in management.

Most of the Senior class has decided to go to graduate school. There has been a drop in the number

who plan to go to graduate school immediately, but a sharp rise in those interested in graduate work.

Question 19.. Do you plan to do graduate work?

	Present study		1958 study
yes (immediately)	152	59%	65%
yes (in a year or two)	78	30%	2%
no	20	8%	33%

When entering M.I.T., most of the students had decided yes or no on graduate school. The split was well defined. They were unable to foresee the future, and they had no idea what the situation would be in four years. Faced with the decision now, many students want to continue but do not have the financial resources. Students who do not have to continue and who are now trained for a job want to continue in some cases but must wait for some reason or other. These people are in engineering and management. From talking with students in science it seems reasonable to assume that most of them will be continuing their education, not so much because they can afford it as because they feel that they must continue in order to be adequately trained for their occupations.

That the student's preference for the theoretical rather than the applied side of science has decreased is shown by questions such as the following.

Question 22. Make the best choice of the alternatives even though they do not represent exactly how you feel.

a. I would like to crack a problem like discovering the principle of the transistor or the mechanism for storing light energy in the first stage of photosynthesis.	110	47%
b. I would like to design the first rocket to the moon or build the first tunnel under the English Channel.	59	23%
c. I would like to create an organization where conditions would be ideal for scientists and engineers to do research work and develop uses for their discoveries.	77	30%
total	246	

Answers to question 22 in 1958:

a	58%
b	28%
c	14%

When asked what type of achievement would be most gratifying, the preference decreased for scientific and applied scientific or engineering tasks and rose for management tasks. This shift agrees with the change in preference for subject material and for the solving of an applied rather than a scientific problem as discussed earlier.

When this question is matched against occupation we get:

	engineering	science	teaching	industrial management
a	32%	87%	85%	10%
b	46%	3%	...	16%
c	22%	10%	15%	74%

From the answers to question 22, it is rather straight-forward to determine those people interested in the different professions. When those people not fitting into the diagonal are grouped together, that is, group c from science and engineering, 85% of them have low morale and are not too sure of what they want. More specifically these people have not been trained for what they are most interested in. In the teaching category there is a split, which confirms the belief that there are two different professions, one connected with research and the other with humanities.

The student's wish for dependence does not carry over into planning a program of study. When asked about their preferences for a curriculum with many required courses rather than one with much elective freedom, two-thirds of the students preferred a curriculum which let them set their own program of study. This preference is a reversal of what was said four years ago.

Question 20. Which of the following statements reflects your own preferences most closely?

a. The curriculum of a college should be constructed so that the courses necessary for a thorough preparation in my field are required even though this may not leave much room for electives.	90	35%
b. Required courses should be kept at a minimum leaving me free to take a great many electives.	161	65%
total	251	

Answers to question 20 in 1958:

a	65%
b	35%

This is not entirely contradictory to the results obtained from the question concerning instructor dependency. The reasons for the shift in response include (1) many required courses which the student took were considered not to be worthwhile, (2) many students could not take courses that they wanted to take because of lack of time, and (3) the student wants greater independence in those areas that he feels he can handle adequately. Freshmen have not the experience necessary to make good decisions concerning courses. The students usually blame themselves for the mistakes that they have made in the curriculum and the courses they have taken.

8.5% of the sample were married and 11.5% engaged. Average study time for this group is 19 hours, which is six hours below average. Yet cumulative ratings are average. These students seem more mature and better suited for the work that they will be doing. All married students, in answering question 5 b, said a "full life concept" was the most important goal.

When questioned about marriage four years ago, only 5% of the class planned marriage before twenty-two and 39% after 22 and before 24 years of age. These answers do not show an uncertainty concerning marriage as freshmen but point to the good possibility that the idea of marriage had not even occurred to many of the men four years ago.

When asked about political preference 50% of the sample were Republicans and 33% were Democrats, both having changed from 60% and 29% respectively. These changes are typical of political preference changes in the past four years. Fifty per cent of the student body is Republican. The upper middle class is well represented at M.I.T., and while the thinking of the students has changed, their priorities and concepts are resistant to change.

The goals and aspiration levels of the M.I.T. student have risen. Average expected salary at age

forty-five was \$15,000 four years ago; now it is \$20,000. It is interesting to look at the course breakdowns of percentages of students with different salary expectations at age forty-five.

	<u>percentages</u>															
over \$20,000	33	54	33	66	25	27	60	40	40	50	75	40	40	25	17	
under \$20,000	66	46	66	33	75	73	40	60	60	50	25	60	60	75	83	
Course number	1	2	3	4	5	6	7	8	10	14	15	16	18	20	21	

Courses 15, 14, and 7 are far more money-oriented than any other courses. The people in 14 who expect to earn over \$20,000 are going into law; those in 7, into medicine.

Students living in apartments have more friends than dormitory or fraternity students. Average number of friends for all students is 4.5. Students living in apartments have slightly over six friends while those living in fraternities have slightly under six. Students in dormitories have about four friends and those students living at home have two close friends. These numbers seem to support the idea that students who have moved into apartments are more independent and sociable and feel that they can get the same advantages that they would have living in a house or dormitory when they are living in an apartment. At the same time the apartment affords greater independence without requiring them to sacrifice either friendship or activities.

Using the student attitudes thus far presented as a background, the question of morale can now be viewed. Morale can be viewed in two ways: one concerned with spirit or personal morale and the other concerned with attitude towards M.I.T. Sussmann divided up her measurement of morale in this way and I believe the division is valid. Her rationale for the division was: "A person may be happy but critical of his environment, or he may be unhappy but uncritical. Even though personal spirits and attitude to the environment usually rise and fall together, they are nevertheless logically distant."¹

Two scales were used to help to determine how the student feels about his experience at M.I.T. Happiness in college is not the only important reason for staying.

The scale of personal esprit was made by using the question: Concerning morale, on the whole would you say at M.I.T. you were very happy, fairly happy, not so happy, or very unhappy. It was believed that this single question would indicate fairly the general level of morale as the student is mature enough to evaluate his own morale.

The students were divided into three groups according to their choices with 22% very high morale, 21% low morale, and 57% average morale.

¹Sussmann, Freshman Morale at M.I.T., p. 55.

Attitudes toward M.I.T. were measured by the following questions.

Question 12 a. In the light of your experiences here, if you were applying to college again, would you return to M.I.T.?

yes 3 points

no 1 point

Question 13. In general, M.I.T. is

better than expected 3 points

about as expected 2 points

not as good as expected 1 point

The scores ranged from two to six and were divided into three groups. Students with two to three points were placed in the unfavorable to M.I.T. group: 67 students. The 121 students with four to five points were classified as having medium attitudes toward M.I.T. 61 students with scores of six were classified as favorable to M.I.T.

Personal esprit and attitude toward M.I.T. are psychologically distant but as shown by the course tabulation below, they are not too empirically distant.

Attitude	Favorable		Medium		Unfavorable	
Esprit						
High	27	44%	26	21%	3	5%
Medium	30	49%	87	72%	24	39%
Low	4	7%	8	7%	40	56%

Esprit decreased as attitude toward M.I.T. decreased, but there were notable exceptions.

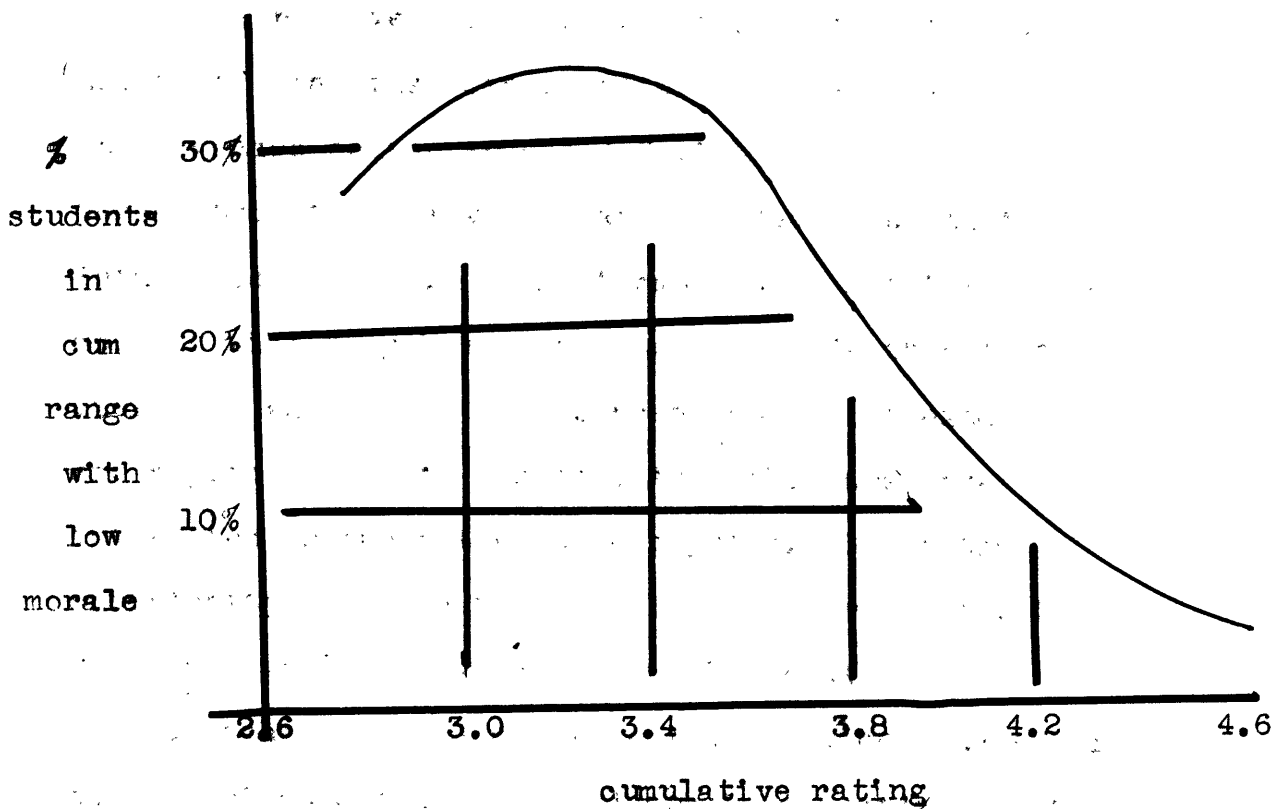
The split obtained is much more pronounced than that we saw four years ago from the same group. In that time the feelings toward the school and the attitudes of the students have had an opportunity to mature. The situation of the students gives them the opportunity to get out of the undesirable atmosphere if they so wish. Students who were happy, but disliked M.I.T. had low grades with the median around 3.2, and over 50% did not participate in activities. Students with favorable attitudes and high morale were high performers and had cums around 3.9. Contrary to the study made four years ago, grades are not the largest factor affecting morale. However, they are still a very important factor.

While there is a break in grades when comparing grades to morale, care should be observed in making comparisons. The lower a person's morale, the lower his marks will probably be. Students with a cum of 3.2 have the highest probability of having low morale and esprit. (See graph on next page.) However, students with marks below 3.0 have fairly high morale.

Cum rating	under 3.0	3.0-3.4	3.5-3.9	4.0-4.4	over 4.4
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Morale

very good	20%	21%	27%	20%	22%
good	53%	46%	47%	70%	74%
poor	27%	33%	26%	10%	4%



From talking with students with low marks,, I feel that they are not displeased with M.I.T. for they feel that the school has given them what they wanted and more. Though they have received low grades, they feel that grades are not indicative of what they have learned and are confident that once they leave M.I.T. they can show what they can do.

Students with low morale are not too sure of what they have received from the school, and they are also unsure of what they can do after they leave it. Their grades center around 3.2 with notable exceptions. These students as a whole have no idea about their future occupations. In most cases they are interested more in what they have neglected to study than in the fields in which they have concentrated. An example are physics students who feel that they are more interested in humanities than physics. Given the opportunity to begin their college careers again, they would not go into physics and would probably go to another school. Students like these students have had their aspirations stifled and are in a quandary, not knowing if what they are doing is correct.

To get greater insight into what determinants there are for morale, students with low morale, those who answered not so happy or very unhappy, were compared with the rest of the sample. This low morale group

amounted to 21% of the sample.

One-third of the low morale students did not participate in extra-curricular activities. Of those participating there is a split with slightly over half the students spending two to four hours a week on activities and most of the others spending over nine hours a week.

Hours per week in extra activities						
	0	1	2-4	5-8	9-12	over 12
% of low morale students	32%	5%	27%	6%	14%	16%

It can be seen immediately that there are two groups of low morale students. They are separated by the amount of time spent in activities. Comparing the time spent on studying we can differentiate between two groups, one spending very little time on their studies and the other spending quite a bit more than the average amount of time on their studies.

Hours per week of study time								
	under 10	11-15	16-20	21-25	26-30	31-35	36-40	over 40
% of low morale students	12%	15%	10%	6%	15%	14%	13%	5%

27% of the low morale students spend 15 hours or less studying in comparison to 19% of the entire group. 32% spend over 30 hours studying in comparison to 26% for the entire group. This split says that the

low morale student either spends too much time studying and is disappointed or he doesn't spend enough time. The students who do not spend enough time studying have lower cums. 26% of the low morale group find difficulty with their studies as compared to 15.5% of the total sample. Of these students study time is either very low or very high with the student spending under 15 hours a week or over 35 hours a week studying. Part of the difficulty which arises may be due to the student's failing to spend enough time on the necessary work, making comprehension difficult.

Only 9% of these low morale students live in fraternities against an Institute average of 25% of the students in fraternities. A larger percent of the students living in apartments, 31%, and in dormitories, 49%, have low morale, indicating that fraternity men have higher morale than any other living group. The ability to socialize now becomes a factor since a fraternity pledge will have a higher degree of social ability than the freshman who did not get a bid.. The fraternity men with low morale all spend less than the average amount of time in extra-curricular activities despite their assumed sociability. Their low morale may be explained by the fact that they have less social ability than their fraternity brothers and do not fit too well into their groups.

40% of the low morale group changed their living groups in comparison to the survey average of 29%. As a rule most of these men moved into apartments, a larger percentage than average in comparison to movement either from fraternities to dormitories or from dormitories to fraternities.

80% of the men who have low morale originally lived or still live in a dormitory. As a rule these men participate less heavily in extra activities and ~~and are less sociable~~. However, those students who moved from a dormitory into an apartment participate more heavily in extra activities and study less than those still remaining in the dormitories. These people left their living groups because they were different from the average students in the dormitories, in their stress on activities, study time, and important values. The average cum of the low morale group is slightly lower than the average cum of the total sample. There is a noticeable absence of low morale in students with cums above 4.0. This is an important breakdown. Both low and high morale students are split evenly on the question of marks as an indication of knowledge.

When asked how important they considered certain goals at M.I.T., the low morale students felt that making close friends was very important: 24% compared to 10% for the entire survey. A check on the number

of close friends that the students had revealed that the average number of close friends per student is less than the average for the survey. Therefore, it seems that the student would have liked to have made more close friends than he had actually made. He is more psychologically distant from his fellows. Most of the students in this category live in dormitories. Those in apartments have more close friends than average. The rest of the choices in question 5 a shifted downward. The group was much more moderate in their choices in comparison to the higher morale students. A striking example were the replies for the importance of intellectual enjoyment in work. The group thought this goal was far less important than average and gave most of the lower value answers received. 30% of the group thought that having fun was not important indicating that the group has not had enough fun or enjoyed its college experiences as much as other groups of students. This trait distinguishes the low morale group as an out group which has lacked certain basic goals in comparison with the rest of the class. The difference in attitudes between these students and their peers, I feel, was one of the major forces causing low morale. Low morale, however, reinforced these different attitudes.

High morale courses are II, VII, XVI, and XVIII;

low morale courses are VI, VIII, XV, and XXI.

In both electrical engineering and physics competition is very high. Both courses, especially physics, are heavily performance-oriented, and those students with low morale have low grades in these courses. Industrial management and humanities are low morale courses for different reasons. Many students have switched to industrial management in the past two years. These students changed courses for one of two reasons; either they believed that industrial management is what they wanted and would enjoy or they were looking for a way to get out of whatever course they were in and XV looked like a good bet. Needless to say, some of these students are probably still unhappy because they have not been able to find the answer in industrial management. Unless these students have changed their positions, they are still unhappy. They, like students in humanities, cannot be too sure of what they will be doing after graduation, and are distressed for this reason. They are still trying to decide if coming to M.I.T. was right, and most of them with low morale do not think so, as supported by the low percentage that would return to M.I.T. if given the opportunity, 30% compared to 85% for the rest of the students.

70% of the low morale group compared to 15% of the rest of the sample would not return to M.I.T. They believe that the reason why they would not return is that they have not yet learned what they wanted to learn. Looking at it differently, the problem is that of the student not yet finding a place where he can apply what he has learned and wondering if it is because previous work cannot be directly applied now that the previous work was a waste of time.

Students with low morale have very little interest in the physical sciences. Only 9.5% are most interested in physical sciences in comparison with a 25% average for the rest of the survey. 39% of the students with low morale are most interested in the humanities and social sciences in comparison with 25% of the remaining students. This percentage was expected to be high because of the preponderance of students in courses XV and XXI in the group, but it was even higher than expected.

Men in science and engineering with low morale have low morale because they are not doing what they are interested in or they are working in a course that they have found does not interest them and feel that it is too late to do anything about it.

Low morale students are more interested in applied science than theoretical science. 5% preferred solving a theoretical problem which the sample as a whole pre-

ferred 53% and which was preferred 69% four years ago.

These low morale students, therefore, have pulled away from science faster than the population as a whole. They are not as scientifically oriented as the rest of the students in their class and tend to be an out-group. Their concept of what they want to do differs from that of the rest of the student body.

When asked how M.I.T. lived up to their expectations, 69% of the low morale students said that M.I.T. was worse than they expected against 4% for the rest of the survey. These students were clearly disappointed or so it seems at first. What these low morale students are actually doing is rationalizing the situation. They are not satisfied with what they have gotten from the Institute and 69% of them say so. This is largely the same group that would not return to M.I.T. It is not that M.I.T. does not have the proper amount of liberal arts or the like, but that these students are disappointed with what they have learned and blame their gloom not on themselves but on the Institute.

By looking at the occupations into which the low morale group plans to enter, we may see an indication of the patterns of thinking of this group.

Engineering	31%
Science	17%
Teaching	13%
Industrial management	18%
Other	21%

There is a shift away from science and engineering and not into industrial management, but into law, medicine, and other careers. This seems to be the course of action for those students going into occupations which do not have strong groups at M.I.T. Morale is low perhaps because of the difficulty in identifying oneself with a group. Doubts arise concerning what is right and wrong. These students, the "other" group above, are very active in activities and receive better grades than average.

78% of the students in this group would like more independence in choosing courses against 60% of the rest of the sample. This fact corroborates the idea that these students do not believe that they have taken the right courses or learned what they should have learned in order to continue in their chosen field.

M.I.T. is heavily performance oriented. When the freshman enters M.I.T., this is one of the first things he realizes. At first the only true marks of performance are grades, and after first term, cums. The student is always concerned with class average. Until he learns that he too can beat the average almost as easily as the next student, the freshman has trouble adjusting. After this realization he eases off and puts more purpose into his work.

By the time he gets to be a senior, M.I.T. does not seem so performance oriented to him. The achievement of good grades has decreased in importance, as has achieving distinction in activities. They have decreased to the point at which an outsider might well say that performance orientation has all but disappeared. But it has not. There is still a constant struggle for performance and grades and some courses are very heavily performance oriented. This is something the student does not easily forget. The expected salaries of the student at age forty-five are quite high; performance has, in this case, been translated to net annual worth. Course XV men, for instance, have much higher aspirations and money expectations than men in any other course. This aggression carries over after graduation and may be one of the things which makes M.I.T. men successful; the drive and determination to get ahead which the student has learned at M.I.T.

This drive is shown once again in question 4 b which concerns grades as an indication of all that the student has learned at college. 94% of the students who said leading a full life is very important also said that their marks were not indicative of what they have learned. Whether they have learned more is not as important as the fact that they do feel that they have learned more.

DISCUSSION

The average M.I.T. student has changed considerably in his four years at the Institute. Average study time has decreased from 32 to 24.5 hours a week. He devotes 9 hours a week less to extra activities. The amount of time he spends studying has little relation to the time he spends in extra activities. The commuter spends less time both in activities and in homework.

The student believes that M.I.T. is difficult, but not very difficult. The work takes time, more than he thinks it should, but he spends the time. A large number, 22%, have moved into apartments from dormitories and fraternity houses.

When asked to rank goals and their importance to him, the student has indicated a decrease in the importance of grades and other goals such as preparing for a future occupation. He feels that having fun is more important to him now than four years ago and feels that he would like to have had more fun as part of his collegiate experience.

He has a 45% chance of not being in the same course he registered in four years ago. The biggest course switches are from Physics, Electrical Engineering, Chemical Engineering, Aeronautics, and Astrophysics to Humanities, Economics, Social Science, and Industrial Management. The switch then has been from science to

engineering to humanities and management.

The student wants more freedom of choice and less responsibility for it than he wanted four years ago.

He is less interested in mathematics, physical sciences, and engineering and more interested in social sciences and humanities. Over one-quarter of the graduating seniors are more interested in humanities and social sciences than in pure or applied science. This percentage is interesting when it is also seen that only 17% of the Senior class is registered in either the School of Industrial Management or the School of Humanities and Social Sciences.

Twenty-two per cent of the class has low morale. Students with low grades, below 3.0, have relatively high morale. The mean for low morale is a cum of 3.2. 30% of the class would not return to M.I.T. if they were starting college again. This too is grade dependent.

A large percentage, 43%, are dissatisfied with what they have learned and many would like required courses kept to a minimum.

A shift has occurred in planned occupations from science to engineering to management and teaching. Over half the class has changed their career plans since entrance. The stress for those students in engineering has increased in research and development due to the influx of science majors into engineering. Most of the class is continuing

on to graduate school either immediately or in a year or two. The student is also more aggressive and feels that he will be worth \$5,000 more at age forty-five than he thought that he would be worth four years ago.

The average student's morale is good as is his esprit for M.I.T. both as an institute of higher learning and as an undergraduate college. He has a cum rating of just under 3.5. He would like to work as part of a team and would be willing to take on difficult and challenging assignments. He feels that he can conquer the challenges set before him and that he is well trained to meet these challenges.

The student has broadened his interests since freshman year. An evidence of this change is the increased interest in the humanities and social sciences. But why has his interest in the sciences declined when M.I.T. is a school of science and engineering? Upon entrance the student has had a minimum of experience in an assortment of different fields. Probably his only insight into science and engineering was through his high school curriculum. At M.I.T. he has tried his hand at a more advanced stage and has been faced with the prospect of deciding if he wants to do a certain type of work as a career. He may have balked.

Many students are faced with similar odd situations. They have come to M.I.T. with the intention of studying science and engineering. But then they have come into

contact with required humanities courses. Whether or not the students like these courses is irrelevant. These courses force them to think about certain things and start some students out on a new quest for knowledge. In this quest they have to make judgments about a broader education. Some students do and some do not broaden their basis of study.

Over one-quarter of the students who remain at M.I.T. feel that they are most interested in the social sciences and humanities. This is a very high percentage considering that M.I.T. is a school of science and engineering. There is a well defined movement from the sciences to engineering and humanities, and from engineering to humanities. This shift occurs as the student broadens his background and is able to make a decision concerning his future. Because of this shift, it is possible that the students who left M.I.T. may have done so because they felt the emphasis on science was too strong.

The student is not as concerned with grades as he used to be. However, he is more aggressive now in other directions. The student feels that money is a more important item and that ^{he} is worth more money. Though he emphasizes grades less, he is more concerned about how well he does in relation to other people as well as being more concerned about living up to his

own expectations. He has acquired this concern at M.I.T. He is no longer satisfied with doing only a fair job. I feel that this trait is one of the main reasons M.I.T. has built up the reputation it has. As a result of the highly competitive atmosphere at M.I.T., the student develops this trait.

Occupational plans have changed for many students due to their changing attitudes. Many plans have changed within the last four years. Many students have decided to work in the fields of industrial management and teaching. The shift into teaching is unusual. Many of the students want to do research work in the sciences and feel that only through part-time teaching can they do research. They like the atmosphere created by an institution like M.I.T. and want to continue in a similar atmosphere. These students are without exception going on to graduate school., Their grades are higher than average.

Why has a shift been made to law and industrial management? The shift to law is small, but is probably a result of the caliber of student the school accepts for admission. These students, all in Courses XIV and XV, have a good technological background but have decided that although their M.I.T. background is excellent, it still does not prepare them for what they want to do as a career. From talking with several of these

students, I feel that they believe that engineering and science are not what they want. They want a field that is broader and more general where they can use their intellectual ability and still deal with people. As previously mentioned many students are interested in industrial management work. Though 17% of the students are entering this field, only 10.5% are enrolled in Course XV. The other students are mostly in the School of Engineering and have low morale. They are interested in fields outside of engineering. Some of them are entering industrial management because they think that they have no other choice. They are not interested in their major and management work is an out or an escape.

Is M.I.T. difficult? Those students who feel that it is difficult do not spend more than an average of 28 hours a week on their studies. Possibly there are two types of students who have difficulty with their work at M.I.T. One group spends more than the average time on their studies and seems to have average morale. The other group spends a minimum amount of time on their studies and has low morale. It seems that the low morale is a result of the student being unable to do his work in the time that he feels it should take, even if that time is only half the time the average student spends working. But why does he spend so little time on his work? Probably, because he sees no immediate

application for what he is learning and has nothing to strive for. This attitude is also linked with low grades. I believe the student has low morale because he is not sure what he will be doing after graduation. Either he is not sure to what use he will put his education or he is faced with the prospect of working in an area which he does not particularly like. This problem is serious for it is one faced by one out of every five students. Whether this problem is as common in other schools is irrelevant. The important thing is that it exists at M.I.T. to a very large degree.

APPENDICES

- A. Reliability.
Sampling Techniques and Bias.
- B. Course Breakdown.
Selected information.
Sample listing by course.
- C. Sample listing of all participants in numerical order.
- D. Cover letter.
Questionnaire.
- E. Coding book of questionnaires with straight tabulation.

APPENDIX A

Reliability
Sampling Techniques and Bias

Appendix A

Reliability of sample:

Cum

average for Class of 1961	3.43
average for sample	3.48

Living group

percentage of Class of 1961 in dormitories	27.5%
percentage of sample in dormitories	28%

percentage of Class of 1961 living at home	10.2%
percentage of sample living at home	11%

Course registered in

Using a chi squared test on the relative percentage of students in each course $p = .90$.

From the above tests the sample appears to be representative of the entire Class of 1961.

Appendix A

Bias

The group I wanted to interview were Senior men, members of the Class of 1961 who started M.I.T. in 1957 and were graduating in 1961. This group had diminished to slightly more than 500 students, having started with 909 students. While there are more than 500 students enrolled in the Class of 1961, I attempted to get only students from the aforementioned group in order to duplicate as nearly as possible Sussmann's original sample. 400 of these students were randomly selected from a list and questionnaires and cover letters were sent to them. With this material the student also received an addressed envelope to be sent through the Institute mail system. Nineteen questionnaires were returned undelivered and 255 were returned in time to become part of the sample which was used in this study. The questionnaires were returned over a period of four weeks.

The sample used covered 51% of the group of seniors who had entered in 1957 and corresponds to 29% of the entire present Class of 1961.

The questionnaire used was comprised of questions from Sussmann's original study and approximately 60% of the questions were new questions. No pretest was made due to time shortages and the fact that the questionnaire Sussmann used had been verified four years ago, thus verifying 40% of the present questionnaire. By using Sussmann's questions valid comparisons could be made as to attitude changes provided that the sample was constant for the two studies.

While bias had an opportunity to enter this study at all points, bias was held to a minimum by having the same person doing all the coding from the completed questionnaires and by checking random results with informal interviews. I have considered Sussmann's sample valid for the comparison of attitudes and values of the Class of 1961 as a whole in 1958.

APPENDIX B

Course Breakdown
Selected Information
Sample Listing by Course

Appendix B

Course Breakdown

Information about various courses is given with points listed in categories where the course did not have an average breakdown as given in a later appendix. Only the important deviations are listed.

COURSE I

8 hours in extra activities
work not difficult
one-third live at home
average cum is 3.67
one-half said the cum was indicative of knowledge
close friends important
full life important
two-thirds have switched into the course
shift down for math and biological sciences
M.I.T. all right
occupational plans still undertain
want required courses kept to a minimum
like to be independent
interested in organization
expected salary at age forty-five: \$15,000.

COURSE IV

average study time is 38 hours a week
cum is not indicative of knowledge
having fun is not part of M.I.T. and not important
full life concept very important
desire primary responsibility for learning
very interested in humanities
high morale
dissatisfied with amount learned
very definite about occupational plans and future status
like to work independently
want to do interesting work regardless of pay
close-knit group
very mature
realistic especially about the future

COURSE VII

ten hours per week on extra activities
average study time
marks not indicative of knowledge
intellectual enjoyment out of work very important
want responsibility for what to learn
interested in biological sciences
morale is very poor
very pleased or very disappointed with M.I.T.
dissatisfied with the amount learned
half of course going into medicine
immediate graduate work
want to work independently
Democrats
future physicians are practical and more mature than
rest of the group
future physicians have a better idea of what they want
physicians have good morale-all others poor morale

COURSE XII

study 35 hours a week
8 hours per week on extra activities
one-half live in apartments
average cum is 3.6
having fun is not important
full life concept
two-thirds transferred into the course
less importance on mathematics and engineering--more
stress on science
social science not too important
one-third unhappy
want intellectual experience
satisfied with M.I.T.
investing in future
immediate graduate work
want required courses kept to a minimum
will take low pay for an interesting job
one-half are Democrats
expected salary at age forty-five: \$10,000.
independent

Course XIV

work difficult but not very difficult
half live in apartments
distinction in extra activities very important
making close friends very important
thorough preparation for occupation important
Institute should assume primary responsibility for
teaching
interest low in science and high in social science
humanities very useful
would not return to M.I.T.
dissatisfied with what they have learned
all are investing in the future
required courses kept to a minimum
want to work on a team
two-thirds are married or engaged
one-half going into law

Course XV

good activity participation with over 7 hours a week
difficult but not impossible
most live in apartments or fraternities--moved
from a dormitory to an apartment
cum is 3.2 with nine under 3.0 and two over 4.0
marks are not indicative of knowledge
extra activities somewhat important
close friends very important
intellectual enjoyment not important
possess better perspectives
tremendous number chose full life
half changed into the course
shift down for math and science and up for social
science
shift from extremes to center
shift down for humanities and up for social science
more efficient way
20% would not return
one-half satisfied with amount learned
work heavy but all right
change in occupational plans
required courses at a minimum
work on a team
money-oriented with expected salary at age 45: \$25,000
70% Republicans
six close friends
delay for graduate school

COURSE XX

study 20 hours a week
four hours a week on extra activities
M.I.T. is difficult
cums not indicative of knowledge
close friends are important
three-quarters switched into the course
primary responsibility to the student with respect
to courses
biological science important
social sciences not important
would not return to M.I.T.
disappointed at M.I.T.
M.I.T. is not worth it
career plans are still indefinite
curriculum kept to a minimum
low income expectations at age forty-five: \$11,000
not sure about working with other people

COURSE XXI

good participation in extra activities
M.I.T. is not difficult
one-half live in apartments and one-half in dormitories
high cums
close friends are important
intellectual enjoyment important
all transferred from engineering
want personal responsibility for course material
medium interest in sciences including biological sciences
low interest in engineering
average interest in social sciences
one-half unhappy at M.I.T.
realistic
one-half would not return
two-thirds plan to be teachers
value of M.I.T. unsure
very liberal
pay unimportant

COURSE 1

413321537113222126010122	3342224321215212318322	1322153115031	96
118431532221111117011011	434143451321522221221	1212232120151	136
615442244112211117010122	223111631111511231 412	2122244215051	151
513411545123213136010411	2431134231215112312212	2311244220031	202
122311536223332236010911	333342653121521111 422	2122114307002	212
114331526232122217010212	2443125322122323141532	1322244112101	239

COURSE 2

412321537223322117020221	2331234623115212 19121	212225431004	22
521521538233212224020812	2232434521222212112131	1222234112021	39
721321545113323136021511	1331444623215222319211	2212254120152	74
721321545113323136021511	1331444623215222319211	2212254120152	74
315431537122121117020221	2342226312115112245311	1321154120042	82
812321545112112217020222	11 221231111521 223512	2122254220061	86
416342231221213116020811	2232224221215212313122	222123423005	88
415332536122222126020612	2232324321224212 42522	122114415031	90
813321547113213131020222	2341334322115222316112	11111341 051	119
313342330212111224020611	3222216111115122341311	1322254130011	126
316331540111212117020222	3241124321215212340512	2322154150061	140
21244223222222126020221	4231334122 15212312222	1222141215031	147
621342241123322116020512	2131224311215112213111	1221241110102	152
513231536112222217020221	3442334321222122118311	1322254125021	164
213332233223221117020611	323233462322222231 221	1221153115071	165
11 3315332222222 020222	423224412221532 11 112	12122 3315041	169
515531534211111117020621	2231234311115112219212	1222154118032	181
214331531123212117020221	2232334522215222241322	2322244120052	191
115342331133322217020612	2341444623215213212111	2111243311301	209
414331529222223222021011	3232232321115212312132	221225311602	213
621411538223312116020211	2133322522115122322112	11221 3225041	220
515331532212122217021611	2342334321215222340511	1322154120081	236
321431534223213224020222	4242135133222323 42322	1322222120062	251

COURSE 3

517222131122223126030611	2222332631221211110132	1211154115201 064
111442238113213126031011	3242334322215113312111	1121141120101 145
315142231111212217030611	313212513112232131 422	1122241215011 163
213311535212221116030612	4341334322115113212121	2222122215991 174
213311530223112114030412	4233216121122222 1 322	1312254112102 176
121431534223212116030812	3243422321115112323522	2212131120022 177
217431537221121217030512	3143326312115323222122	1322254210501 224
214411534111111124030911	3133222122215211 2 521	1122154320021 226
121442342113212136030611	3242334323215212312121	1222121215102 229
121342235223222117030321	2241234331122212315412	1312134230021 232
421321539113212126031612	1132322331115212324121	1111254115021 245

COURSE 4

621321538223313117040422	33323262311152223545 1	2322221 10032 14
513342331213223117040422	3224316421115222354532	2311221225031 109
613421542223213136040112	223211532222222254222	2112224120031 155

COURSE 5

114421545112322136050522	1123322423123213125512	2121134115062	30
115321541112223217050611	2144312321124212223512	2122132215071	48
115321541112223217050611	2144312321124212223512	2122132215071	48
216321537121112117050811	3124222412115112322511	2122244115051	061
221311545113212114050521	1111212522115312229511	2112144225031	120
121312240213123126050521	3224135433121322323511	2121224310051	127
721231531213212136050521	3124212423123221222511	2121243310031	134
213331535113213126051011	3114432431122222 23512	21221 2220031	150
921522335223332235051611	324244254322 313114312	2321234310031	216
415311531222212136050212	3113221412115112222511	2112254125102	221
315311528212112217050311	3244222421215222 3 311	21122 4120051	234
821321530223212217050811	3234316421115212222511	21212143 031	235
112432249223123126050521	2233322411115122230512	1122144212102	241
818342237221112223050522	2123442623115321323512	21222431 101	242
21334223222222117050521	2144322422115123230512	1322111212021	244

COURSE 6

216421534122222117061011	3442334222115212212121	1221124110051	16
321221533122111225060811	3223423521 22212312121	2222144215032	18
415221534213222131060621	2211224342121221 16222	1212134220041	29
9165215481333 32 060621	111111 11 15213 1 111	1122222135201	311
521321537223222117060621	2221234622215212319211	2222144120101	33
221421537223311116060622	12311446332 221112122	122113312002	36
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313332237223212224060622	3241334321215112310122	2222254215081	110
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116421542122111116060621	2141224311215213311112	1122244215101	118
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21431549123211217060611	2133312321115222320512	1112243115042	142
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13231545213122126060211	224123432111522231 112	112215421320	158
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512242242112112117060711	2131342621115212312111	1121154130032 193
414311538223323217060611	324232232 15212 22111	112111421003 194
22132153622311211706 21	2232432523115212310121	1221153115053 200
21342235123222136060811	2332334322215112311221	1122123115082 215
313421545123211117060811	2231115311115112311311	1311133218061 222
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612331536212111117060621	121232353122231117 5 2	2112134225061 253

COURSE 7

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COURSE 8

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COURSE 10

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1111314532215222312222

121223411504 231

COURSE 12

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516321542112222126120611	3233332122115212332512	2121154112081 192
813242231222223227121611	3133332331115112223512	1121224308101 196
715231544223223217121222	4324216421121211361512	2322234210032 201

COURSE 13

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COURSE 14

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COURSE 15

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721342327 23322116151521	323323 311215112344532	1222151120	1 2111
214242333123222116151521	3243116332215221345512	1312124240041	249
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516242227112122126150611	3443225232215112342532	1322133120061	252

COURSE 16

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COURSE 18

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413321536213213117181821	1133221321115222391522	2122114125 2 106
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821312237213212126181822	1344321321115212395532	1321244117081 159
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815241336211122231180812	1144421512115222222512	2121221 08101 185
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215431528222122217180812	1222231622124222335522	1121223 18041 247

COURSE 20

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COURSE 21

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318542232233333333211012	33342164321243 3 9 5 2	21222242 021 146
413442341112111117210212	3231116311215112293312	1322241215132 154
51534234221111111211612	222322644112132213 512	2122244110001 167
116442337132222126210412	4314113111122212373512	13222 3125062 217

APPENDIX C

Sample Listing of all Participants
in Numerical Order

212421527233122223131011	3441324321115312113232	2221224212061	1
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416221529221122126101021	3343225321222122342522	1321143112041	6
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31542154011211 117101021	3431224211215123213412	111222 320061	8
42122153023322136060811	324144464322 32111 232	2212134212031	9
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317421537233212124150812	2143135313215222282512	1322224299202	24
21332153022221211708082	2132212321 1522233 512	21222241 001	25
413421548111212221101811	2131324311215212212212	2212144125101	26
617321534 23322116080822	2233226321215112310322	1322244320061	27
213221537112212116080821	2133422511115112224 12	1121234225201	28
415221534213222131060621	2211224342121221 16222	1212134220041	29
114421545112322136050522	1123322423123213125512	2121134115062	30
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221421537223311116060622	12311446332 221112122	122113312002
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415421531232112117151612	2232115311215112341522	1222222125031
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721321545113323136021511	1331444623215222319211	2212254120152 7
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413231532212223116151522	3242344622115212344311	1322244135051 7
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315231530221121117151521	4222226121215212144322	1222154112201 7
712342343 23222117060622	113133452321521232 111	112213411510 8
213311544111212134080611	3134222421115112230511	1122214120052 8
315431537122121117020221	2342226312115112245311	1321154120042 8
413421548123113116210812	3234216421115112232512	1121212112151 8
5133423441232121 6060622	213232252 11512223151	1122152330101 8
812321545112112217020222	11 221231111521 223512	2122254220061 8
413221529213322116060621	3231334631222212318212	1112153110051 8
416342231221213116020811	2232224221215212313122	222123423005 8
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415332536122222126020612	2232324321224212 42522	122114415031 90
313431538123111117151011	2342321311115212231512	1121223220052 9
415321531212132117060621	1111341611123311314221	1122224115062 9
212321529223232117060622	4442434532215212316232	1222144215101 9
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616321533123212127180811	2132332322115212397511	1321244110051	95
413321537113222126010122	3342224321215212318322	1322153115031	96
915231529212212116150211	3343225311 15112 42521	1322 53130 1	97
115411526212132331151521	444333 322224222 44521	1312244112031	98
321442336 11112114140811	1223311421122223381512	1112224225041	100
413431530233112116150812	3242216321222311343521	1321114130052	101
712342246113111117211812	222311542111521223 5 2	11222 4310101	102
613242231212112117101022	2231116331222311315122	2322141210102	103
121342231123121117101022	3332444633215322315332	1222114220051	104
212311546213111114080822	2123322421122221233512	112221411306	105
413321536213213117181821	1133221321115222391522	2122114125 2	106
515121529223212234080611	4133422132221321341522	2321144125041	107
215332231223112117080821	3214223411115212225111	1122243320061	108
513342331213223117040422	3224316421115222354532	2311221225031	109
313332237223212224060622	3241334321215112310122	2222254215081	110
213342331223211217060621	2331224321115212215322	1322153225031	111
115321534123213134060621	3342434342222212119222	2312134120102	112
714311541 23223136060621	111134262321522332 111	1121223115001	113
515342237112 13136140911	224133433212212231 312	1311254115081	114
521312325222222117161622	3232332522224311314122	1222151115031	115
321312234223111117071012	2423333232124321122522	2322134115051	116
213442337122131117161621	3341234322115112317111	1212153115151	117
116421542122111116060621	2141224311215213311112	1122244215101	118
313321547113213131020222	2341334322115222316112	11111341 051	119
221311545113212114050521	1111212522115312229511	2112144225031	120
115431540223111217101022	223231612121521113 312	1322124325002	121
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115342330212112116101022	2231234611215112212 22	122224422503	125
313342330212111224020611	3222216111115122341311	1322254130011	126

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221411532223222217060621	2221224 21222212 14222	1322124210051 130
31643154122221221407 12	331222311122221 27231	1322144225101 130
414331532213112117060811	213133262211521221 121	12122 4 15022 133
721231531213212136050521	3124212423123221222511	2121243310031 134
213331531222112117151011	2343115321215212343522	1322242125061 135
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112431532223322226180811	1332321513115323 12122	2122143 17032 138
413342332212111126060612	233131432122222134 322	1112223250051 139
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321431549123211217060611	2133312321115222320512	1112243115042 142
413231531222211116160611	2341244612215112316412	1222152212062 143
413431528223212116060621	3331334521215222314121	1122143115061 144
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318542232233333333211012	33342164321243 3 9 5 2	21222242 021 146
212442232222222126020221	4231334122 15212312222	1222141215031 147
412131527213121126201012	432311512121512231 312	1321232115051 148
213331535113213126051011	3114432431122222 23512	21221 2220031 150
615442244112211117010122	223111631111511231 412	2122244215051 151
621342241123322116020512	2131224311215112213111	1221241110102 152
316431536 22 12117101022	3231224211215222216112	13222222 051 153
413442341112111117210212	3231116311215112293312	1322241215132 154
613421542223213136040112	223211532222222254222	2112224120031 155
212431543213112217081612	2144212421123123 2 512	1122232117041 156
321311541213222117151522	32422263211153223425 1	1321142215032 157
413231545213122126060211	224123432111522231 112	112215421320 158
821312237213212126181822	1344321321115212395532	1321244117081 159

314332229222222136161622	3231324522215112311122	2122243215202 160
913331533122213116080822	2143222321122212225521	1112224120032 161
821311529223313117060621	2242334511115222217121	212121421007 162
315142231111212217030611	313212513112232131 422	1122241215011 163
513231536112222217020221	3442334321222122118311	1322254125021 164
213332233223221117020611	323233462322222231 221	1221153115071 165
316232235212232217060622	2222434533221212315121	2212254 12002 166
515342342211111111211612	222322644112132213 512	2122244110001 167
13431538211121115101021	3343334311215123315311	1212251235042 168
11 3315332222222 020222	423224412221532 11 112	12122 3315041 169
117442328222331215150612	2343115323222222384512	1311254120 2 170
415331535222112124060622	1322321511115112218111	1122254116081 171
21443153521221211708082	11333225111152 2222511	112 234125101 172
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214431542121111117161622	2141334311215213 15311	13121 4250062 178
317421547121212122080822	1123322421115223128522	2121154130051 179
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121212230123223126060621	4223422122215222319111	112221311203 182
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913321532233122217181821	233334162211521319 532	1112251130101 184
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413211535212221116101021	3341134322215222314111	1121253115021 189
213342328223212116141421	4443115231222322392532	1222131240072 190

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516321542112222126120611	3233332122115212332512	2121154112081 192
512242242112112117060711	2131342621115212312111	1121154130032 193
414311538223323217060611	324232232 15212 22111	112111421003 194
214221529222112116150612	3332235322115211344421	11211 4220041 195
81324223122223227121611	3133332331115112223512	1121224308101 196
31 331543112111117081011	2132432522115211221511	1121223115062 197
31242154012311111710102	1131432522 15212218112	22122141 081 198
413311531222212224200512	3424333422223312325512	2321244120031 199
22132153622311211706 21	2232432523115212310121	1221153115053 200
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413321532212211117150812	3444245312215212242512	2222142125152 210
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5153315401211122 080822	11121 11522212 512	11222 41 061 219
621411538223312116020211	2133322522115122322112	11221 3225041 220
415311531222212136050212	3113221412115112222511	2112254125102 221
313421545123211117060811	2231115311115112311311	1311133218061 222

31234233912311113 180611	1232231323115212331511	2122244212001 223
217431537221121217030512	3143326312115323222122	1322254210501 224
315331530 23112117101021	334133432121522231 221	1322254117041 225
214411534111111124030911	3133222122215211 2 521	1122154320021 226
613421545113212224061611	3232326522115122331111	2122253320031 227
321221533112122117161621	3333326431122212382511	1322154150071 228
121442342113212136030611	3242334323215212312121	1222121215102 229
421311534223113117101022	4342234321215212341521	122114311504 230
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91244223911222221080821	2232424531223313141311	2122224225051 233
315311528212112217050311	3244222421215222 3 311	21122 4120051 234
821321530223212217050811	3234316421115212222511	21212143 031 235
515331532212122217021611	2342334321215222340511	1322154120081 236
315342327223223116161621	2131332522115222215111	1222251325022 237
613421535223312114070511	2113323543115122331512	2111234215 1 238
114331526232122217010212	2443125322122323141532	1322244112101 239
414432233222122126161621	2232334622115212315121	122 152110022 240
112432249223123126050521	2233322411115122230512	1122144212102 241
818342237221112223050522	2123442623115321323512	21222431 101 242
521342341113211217060621	2243125322115112121512	1122234220061 243
21334223222222117050521	2144322422115123230512	1322111212021 244
421321539113212126031612	1132322331115212324121	1111254115021 245
116331537221112116080821	3233125311215112342522	1312152225031 246
215431528222122217180812	1222231622124222335522	1121223 18041 247
913331542222122223080821	3243326322115222 14522	1122143217101 248
214242333123222116151521	3243116332215221345512	1312124240041 249
31433153422222217151521	3333226222215322 4 512	1322254212021 250
321431534223213224020222	4242135133222323 42322	1322222120062 251
516242227112122126150611	3443225232215112342532	1322133120061 252
612331536212111117060621	121232353122231117 5 2	2112134225061 253

118321530112213124070812

3213323533215322391512

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APPENDIX D

Cover Letter

Questionnaire

20 February 1961

Dear Member of the Class of 1961

Three and a half years ago, you participated in a study done by Leila Sussmann on our class, the Class of 1961. If you happened to have read her reports, you were probably interested in her results and had questions concerning them. I did too and because of it, I am working in this area for my thesis.

Since the time of the study, many things have occurred concerning our attitudes and values. As my thesis project, I am trying to find out what changes have occurred in our class since our freshman year here. By asking some of the very questions originally asked, I hope to reconstruct attitudes as they now are and compare them with our attitudes four years ago.

It is important to my thesis to have all of the questionnaires returned to me so I can validly construct an accurate picture, therefore, I would appreciate it if you filled out your questionnaire immediately before you forget about it.

I appreciate your help.

Art Katz '61

6a. What course are you registered in?

20

20 (number of course)

6b. What course were you registered in freshman year?

22

22 (number of course)

7. Of the following learning situations, which do you prefer?

One in which the instructor assumes primary responsibility for showing me what must be learned.

1 (check one)

One in which the primary responsibility for selecting what is important is given me with the instructor available for guidance when needed

2

8. How interested are you in the following? (answer for each)

	extremely interested	quite interested	somewhat interested	not interested
a. mathematics	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
b. physical sciences	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
c. biological sciences	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
d. engineering	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
e. social sciences	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
f. humanities	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>

8b. Which interests you most? last digit (appropriate letter)

8c. Which interests you least? last digit (appropriate letter)

9. Concerning morale, on the whole, would you say at MIT you were

- 1 very happy
 - 2 fairly happy
 - 3 not so happy
 - 4 very unhappy
- (check one)

10. Which of the following statements reflects most closely your opinion concerning the relation of humanities courses to your professional life?

- 1 I think these courses are very useful
 - 2 I think these courses have some use
 - 3 I think these courses have little or no use
- (check one)

11. People differ in the kinds of intellectual experiences they enjoy. Which of the following gives you greater pleasure? (check one)

An experience like suddenly seeing the solution to a mathematical problem or grasping a relationship for the first time.

1

An experience like figuring out a new and more efficient way of getting something done.

2

12a. In the light of your experiences here, if you were applying for entrance to college all over again, would you come back to MIT?

- 1 yes
- 2 no

12b. If no, what school would you go to? (write name or type below)
1-small lib arts 2-large university 3-technical school 4-other

13. In general, MIT is 1 better than expected
(check one) 2 about as expected
3 not as good as expected

14. Regardless of your grades, are you satisfied or dissatisfied with the amount you have learned?

1 satisfied
2 dissatisfied

15. Which of the following statements most nearly expresses your own view?

The workload here is heavier than it should be 1
The workload is heavy but it has to be, and I'm willing to go along with it 2
The workload isn't too heavy 3

16. Which of the following statements reflects best your own view?

I'm not having as much fun as I ought to be having at my age and I'm not sure it's worth it 1
I am working hard but I enjoy the work very much 2
I am working harder than I really like to but I feel it is a worthwhile investment in my future 3

17a. Whether you have made definite plans or not, which type of occupation are you planning to enter or leaning toward most heavily

1 Engineer
2 Scientist
3 Teacher
4 Indust Mgmt
5 Architect
6 Physician
7 Lawyer
8 other
9 actuary
 other(write in) _____

17b. When did your plans become definite about this occupation?
x years ago

18. If you are planning to go into engineering, what are you mainly inclined toward?

1 Research and Development
2 Design and Construction
3 Administrative function
4 undecided

19. Do you plan to do graduate work?

1 yes (immedhately)
2 yes (in a year or two)
3 no

20. Which of the following statements reflects your own preferences most closely? (check one)

The curriculum of a college should be constructed so that the courses necessary for a thorough preparation in my field are required even though this may not leave much room for electives. 1
Required courses should be kept to an absolute minimum leaving me free to take a great many electives 2

You are requested to treat the following set of questions like a game and check for each set of alternatives the choice you like best even though no alternative may represent just what you really want for yourself.

- 61 21. I would like to be in a research and development laboratory as part of a team of colleagues working together on a problem 1
 I would like to be in a research laboratory where I could work on problems pretty much on my own 2
- 62 22. I would like to crack a problem like discovering the principle of the transistor, or the mechanism for storing light energy in the first step of photosynthesis 1
 I would like to design the first rocket to the moon, or build the first tunnel under the English Channel 2
 I would like to create an organization where conditions would be ideal for scientists and engineers to do research work and develop uses for their discoveries 3
- 63 23. If I had sole responsibility for a project, I would want to have enough authority over those working with me to see that things were done in the way I thought they should be 1
 If I had sole responsibility for a project, I would want to hire men whose competence I greatly respected and then work things out with them on a give and take basis 2
- 64 24. I would accept a permanent job which promised to provide only a fair income 1
 I would accept a job which promised a very high income if the venture succeeded but where there was a good chance of its not succeeding 2
- 65 25. I would accept a job with high pay where the work was interesting, but not exactly the kind which interests me most 1
 I would accept a job with low pay where the work was the kind which interests me most 2
- 66 26. Which of these choices was the hardest for you to make?
 last digit of # (write in the number of the question in the margin)
- 67 27. Are you 1 married
2 engaged
3 going steady
4 unattached
- 68 28. Do your political sympathies lean more toward
1 the Republicans
2 the Democrats
3 other(write-in) _____
- 69-70 29. Assume the buying power of the dollar remains at its present value, about what annual income do you expect to command at the age of 45? XX dollars a year
- 71-72 30. How many close friends do you have? xx close friends
- 73 31. Are you part of the original survey made during the fall of 1957
1 yes 2 no

APPENDIX E

Coding Book of Questionnaire with
Straight Tabulation

CARD COUNT AND TABULATION OF QUESTIONNAIRE (March 1961)

Thesis - A. Katz

TOTAL 256

1a. About how many hours a week do you spend on your academic work at MIT outside of your attendance at classes and assigned lab work

	#	%
under 10	12	4.8
10 -15	37	14.5
16-20	42	16.5
21-25	45	17.5
26-30	48	19
31-35	26	10
36-40	20	8
41-45	10	4
over 46	11	4.5
NA	5	

1b. Do you take part in extra-curricular activities

	#	%
yes	205	80%
no	50	20
NA	1	....

1c. How many hours a week do you devote to them

	#	%
none	49	19 %
1-2	27	10.5
3-5	73	28.5
6-8	29	11.5
9-12	39	15
13-16	22	8.5
17-20	8	3
over 20	5	2
NA	4	

2. How difficult are your studies at MIT (ck one)

very very difficult	4	1.5 %
very difficult	34	14
difficult	135	53
not too difficult	76	30
easy	6	2.5

3a. Where do you live

	#	%
home	28	11 %
dormitory	106	41.5
fraternity	64	25
apartment	58	22.5

3b. Did you live there freshman year

	#	%
yes	182	71 %
no	74	29

3c. If not, where did you live

apartment	1	0%
dormitory	43	60%
fraternity	31	40
home	1	..

people ~~from~~ dormitories moved into

home	4	6%
fraternity	8	12
apartment	31	72

people from fraternities moved into

home	1	0%
dormitory	3	12%
apartments	27	85

4a. What is your cumulative rating

cum	#	%	cum	#	%
2.5	1	..	3.8	11	4
2.6	3	1	3.9	5	2
2.7	6	2	4.0	9	3.5
2.8	10	4	4.1	10	4
2.9	9	3.5	4.2	13	5
3.0	16	6	4.3	9	3.5
3.1	21	8	4.4	7	2.5
3.2	17	6.5	4.5	13	5
3.3	10	4	4.6	4	1.5
3.4	23	9	4.7	5	2
3.5	14	5.5	4.8	4	1.5
3.6	11	4	4.9	2	..
3.7	19	7.5			

4b. Is this indicative of your knowledge and what you have gained as a student

yes	99	39%
no	143	56
blk	14	5

5a. How important to you personally are each of the following in your career at MIT

	very impt		somewhat impt		not impt	
achieving good grades	96	38%	536	53%	22	9%
achieving distinction in some extra-curr activity	31	12%	94	37%	131	51%
making close friends	26	10%	122	48	106	42
getting intellectual enjoy- ment out of my work	155	61	89	35	11	4
having fun generally	56	22	150	58	49	20
getting a thorough preparation for my future occupation	173	68	78	30	4	2
preparing for living a full life	150	58	71	28	29	12

5b. Which is the most imp't

getting good grades	9	3.5%
achieving distinction.....	2	0.8%
making close friends	7	2.5%
getting intellectual enjoy....	43	17
having fun generally	4	1.5
getting thorough preparation...	80	31
preparing for full life	101	39.5
blk	9	3.5

6a. What course are you registered in

b. What course were you registered in freshman year

course #	total	now	total	original	total	new	change from
I	6	2.5%	2	.8%	4	1.5%	1 0.8%
II	22	8.5	11	4	11	4	8 3%
III	12	4.5	2	.8	10	4	1 0.8%
IV	3	1	2	.8	1	0	3 1.2%
V	16	6	8	3	8	3	6 2.5
VI	43	17	29	11	14	5.5	29 11
VII	5	2	--	--	5	2	3 1
VIII	39	15	31	12	8	3	25 10
IX	--	--	--	--	--	--	3 1
X	26	10	23	9	3	1	14 5.5
XI	5	2	2	.8	4	1.5	--
XII	1	0.4	--	--	1	0.4	--
XIII	6	2.5	1	0.4	5	2	--
XIV	27	10.5	12	4.5	15	6	2 0.8
XV	13	5	11	4	2	0.8	9 3.5
XVI	15	6	7	2.5	8	3	6 2.5
XVII	4	1.5	1	0.4	3	1	--
XVIII	12	4.5	--	--	12	4.5	--

Have you changed courses since freshman year

yes	114	45%
no	142	55%

7. Of the following learning situations, which do you prefer

One in which the instructor assumes primary responsibility for showing what must be learned

143 56%

One in which the primary responsibility for selecting what is important is given me with the instructor available for guidance when needed

107 42%

8a. How interested are you in the following

	extremely	quite	somewhat	not
mathematics	51 20%	97 38%	86 34%	22 8.0%
physical sciences	76 30%	107 42%	57 22%	16 6%
biological sciences	19 7%	37 14%	57 22%	86 34%
engineering	68 26%	81 32%	75 29%	82 32%
social sciences	35 14%	78 31%	104 41%	37 14%
humanities	53 21%	95 37%	84 33%	22 8%

8b. Which interests you most
 c. " " " least

	most		least	
mathematics	20	8%	24	9.5%
physical sciences	64	25%	13	5
biological sciences	13	5	94	37
engineering	79	31	37	14.5
social sciences	34	13	49	19
humanities	37	14.5	31	12
blank	8	3	8	3

9. Concerning morale, on the whole, would you say at MIT you were

very happy	56	22%
fairly happy	141	55%
no so happy	44	17%
very unhappy	11	4.5

10. Which of the following statements reflects most closely your opinion concerning the relation of humanities courses to your professional life

I think these courses are very useful	137	54%
I think these courses have some use	75	30
I think these courses have little or no use	37	14.5

11. People differ in the kinds of intellectual experiences they enjoy
 Which of the following gives you greater pleasure

An experience like suddenly seeing the solution to a mathematical problem, or grasping a relationship for the first time	155	53%
An experience like figuring out a new and more efficient way of getting something done	111	43%
blank	8	

12a. In the light of your experiences here, if you were applying for entrance to college all over again, would you come back to MIT

yes	178	70%
no	75	30

12b. If no, what school would you go to (write name or type)

schools like		% (on 75)
Univer of Vermont	8	10%
Harvard, UCLA, Col.	44	59%
Worcester, RPI, CalTech	10	13
Other	10	13

13. In general MIT is

better than expected	71	28%
about as expected	134	52%
not as good as expected	45	18%

14. Regardless of your grades, are you satisfied or dissatisfied with the amt you have learned

satisfied	148	57%
dissatisfied	105	43%

15. Which of the following statements most nearly expresses your own view

The workload here is heavier than it should be	39	15%
The workload is heavy, but it has to be and I'm willing to go along with it	183	72%
The workload isn't too heavy	31	13%

16. Which of the following statements reflects best your own view

I'm not having as much fun as I ought to be having at my age and I'm not sure it's worth it	36	14%
I am working hard, but I enjoy the work very much	72	28%
I am working harder than I really like to but I feel its a worthwhile investment in the future	122	58%

17. Whether you have made definite plans or not, which type of occupation are you planning to enter or leaning toward most heavily

Engineer	93	40%	*includes
Scientist	62	24%	teacher-research
*Teacher	32	12	
Indust Mgmt	43	17	
Architect	2	..	
Physician	17	3	
Actuary	4	1.5	
Lawyer	7	3	
other	6		

18. If you are inclined to go into engineering, what are you mainly inclined to. replies 122 48% % (on 122)

research and Development	59	49%
design and Construction	24	18%
administrative function	28	21%
undecided	10	10%

17b. When did your plans become definite about this occupation.

0 yrs ago	65	21%	8%
10	39	15%	4%
21	15	6%	3.5%
32	57	22%	3.5%
43	24	9.5%	5%
54	25	10%	

19. Do you plan to do graduate work

yes (immediately)	152	59%
yes (in a year or 2)	78	30%
no	20	8%

20. Which of the following statements reflects your own preferences most closely

The curriculum of a college should be constructed so that the courses necessary for a thorough preparation, in my field are required even though this may not leave much room for electives 90th 35%

Required courses should be kept to an absolute minimum leaving me free to take a great many electives. 161st 64%

YOU ARE requested to treat the following ~~sets~~ sets of questions like a game and talk about or check for each set of alternatives the choice you like best even though it does not represent a fair alternative. Represent what you really want for yourself.

21. I would like to be in^a research and development laboratory as part of a team of colleagues working together on a problem.

160th 63%

I would like to be in a research laboratory where I could work on problems pretty much on my own 95th 37%

22. I would like to crack a problem like discovering the principle of the transistor, or the mechanism for storing light energy in the first stage of photosynthesis 119th 47%

I would like to design the first rocket to the moon, or build the first tunnel under the British Channel 59th 23%

I would like to create an organization where conditions would be ideal for scientists and engineers to do research work and develop uses for their discoveries 77th 30%

23. If I had sole responsibility for a project, I would want to have enough authority over those working with me to see that things were done in the way I thought they should be 62nd 25%

If I had sole responsibility for a project, I would want to work with and hire men whose competence I greatly respected and then work things out with them on a give and take basis 194th 75%

24. I would accept a permanent job which promised to provide only a fair income. 77th 30%

I would accept a job which promised a very high income if the venture succeeded but where there was a good chance of it not succeeding 175th 70%

25. I would accept a job with high pay where the work was interesting but not exactly what interests me most 110th 43%

I would accept a job with low pay where the work was the kind which interests me most 144th 57%

26. Which of these choices was the hardest to make

QUEST.	21	22 nd	8.5%	QUEST 24	60 th	23.5%
	22	44	17	25	73	28.5
	23	43	17	blank	14	5.5

		#	%
27. Are you	married	22	8.5
	engaged	30	11.5
	going steady	42	16.5
	unattached	161	63

28. Do your political sympathies lean more toward		#	%
	the Republicans	128	50%
	the Democrats	84	33
	other	33	14
	blank	10	3

29. Assume the buying power of the dollar remains the same, about what annual income do you expect to command at age 45		#	%
50 & over	10	4%	15
thous 40	96	2%	14
of 35	85	2	13
dollars 30	33	5	12
25	133	13	11
20	341	16	10
18	5	2	8
17	5	2	7
16	3	1	6

30. How many close friends do you have	# friends	#	%
	25 plus	7	2.5%
	20	8	3%
	15	8	3
	13	1	..
	12	6	2
	10	31	12
	9	2	1
	8	12	4.5
	7	9	3.5
	6	25	10
	5	35	14
	4	23	9
	3	41	16
	2	25	10
	1	2	1
	0	7	2.5
	blank	12	4.5

31. Are you part of the original survey made during the fall of 1961		#	%
	yes	164	65%
	no	68	26%
	blank	24	9%

PERCENTAGES DO NOT ADD UP TO 100 BECAUSE OF CHOICES LEFT BLANK- ALL PERCENTAGES BASED ON TOTAL NUMBER OF QUESTIONNAIRES RECEIVED UNLESS OTHERWISE NOTED

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