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ABSTRACT

Summarized is a followup to a larger study concerning job satisfaction characteristics of associate degree graduates of technology programs at Pennsylvania State University. Involving students graduating during the period from 1955 through 1971, the study sought to determine: (1) the present status of the graduates, (2) job information about the graduates since their completion of degree requirements, (3) job orientation characteristics of the graduates, and (4) the need for changes in the existing curriculum. Data were obtained from a questionnaire sent to approximately 33 percent of the graduates. Findings suggest that curriculum planners should give serious consideration to reducing enrollment levels in associate degree technology programs due to low salary levels and high unemployment and promotional rates. [Related documents are available as VT 020 385 and VT 020 387 in this issue]. (SN)

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JOB SATISFACTION CHARACTERISTICS OF SELECTED ASSOCIATE DEGREE GRADUATES

by

ANGELO C. GILLIE, SR.
PROFESSOR
GRADUATE STUDIES AND RESEARCH

Assisted by

EDWARD MANN
GRADUATE ASSISTANT

ONAL — TECHNICAL EDUCATION Research Report

MAY, 1973

JOB SATISFACTION CHARACTERISTICS OF SELECTED ASSOCIATE DEGREE GRADUATES

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Angelo C. Gillie, Sr.
Professor
Graduate Studies and Research

Assisted by

Edward Mann
Graduate Assistant

Department of Vocational Education
The Pennsylvania State University
University Park, PA 16802

May, 1973

PREFACE

The findings reported herein are a part of a larger study concerning associate degree graduates of the Electrical-Engineering Technology, Drafting Design Technology, Business, Retailing, Surveying Technology, and Forest Technology curriculums of The Pennsylvania State University. The first two curriculums mentioned have had 17 graduation classes (1955-71) while the others are considerably younger. The results and suggestions are most appropriate for the two older programs because they have provided the major portion of the graduates (and therefore the sample). Other aspects of the larger study include geographic and job mobility, continuing education history, relevancy of curriculum topics in present jobs, and general demographic considerations of associate degree graduates. These are presented in other reports.

This is the second follow-up study made of The Pennsylvania State University associate degree graduates by this investigator. The first study resulted in four reports published by the Department of Vocational Education in 1970-71. It is hoped the effort can be continued, with the intention of developing the entire activity into a longitudinal study of The Pennsylvania State University associate degree graduates. Because of the size of the original population from which the sample is drawn, it is assumed the findings are not untypical of graduates from similar two year programs throughout the nation. Therefore the findings, conclusions, and suggestions would hopefully be of some use for others interested in two year college graduates and their curriculums.

Special thanks is offered to Edward Mann, who researched and wrote the Review of Related Literature section. Mr. Mann, who served as a Graduate Assistant to this investigator in the Department of Vocational Education, also deserves recognition for the many hours spent at the Computation Center running the required statistical programs and preparation of the tables that appear herein. Help was also provided at various times by Graduate Assistants John Glenn and Eugenio Basualdo, Research Assistant Patrick O'Reilly and Dr. Jerome Kapes, Assistant Professor in the Department of Vocational Education.

The study was supported by funds from the Bureau of Vocational, Technical and Continuing Education of the Pennsylvania Department of Education and the Department of Vocational Education of The Pennsylvania State University. The analysis used in the study is described in the sampling and findings sections. Using the findings as a basis, two major suggestions are made in this report. The investigator assumes full responsibility for them.

Angelo C. Gillie, Sr.
Professor
Graduate Studies and Research

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INTRODUCTION

The findings reported in this study are derived from a questionnaire sent to approximately 33 percent of The Pennsylvania State University associate degree graduates for the years 1955 through 1971 inclusive. The total sample exceeded 1,700 graduates, with most of them completing their associate degree work during the past five years. The curriculums in which graduates were queried were: Electrical Engineering Technology (EET), Drafting Design Technology (DDT), Business (BUS), Retailing (RTL), Surveying Technology (SRT), and Forest Technology (FORT). The distribution of the sample by graduation year and curriculum is displayed in Table 1.

Because of the size of the sample, it was decided to utilize the techniques of Optical Scanning for tabulation of data. The overall concern in the study dealt with obtaining information about the graduates of the curriculums indicated. Several of these programs have had associate degree graduates since 1955, while others are relatively recent in vintage and only a few graduates are presently on the scene. Those programs whose graduates were examined are limited to those with a minimum of 75 graduates up to and including the 1971 graduation class. The study sought to obtain several kinds of information, which can be categorized as follows:

1. present educational status;
2. information about employment since earning the associate degree;
3. job satisfaction characteristics;
4. job orientation characteristics (data, people, things);
5. need for certain curriculum topics on present jobs.

TABLE 1

SAMPLE DISTRIBUTION BY CURRICULUM AND GRADUATION YEAR

		Curriculum					
Year of Graduation	Sample N	DDT	EET	BUS*	RTL*	FORT*	SRT*
1955	18	9	9				
1956	23	14	9				
1957	41	19	22				
1958	54	39	15				
1959	59	37	22				
1960	52	29	23				
1961	39	21	18				
1962	44	19	25				
1963	55	34	21				
1964	45	21	24				
1965	60	31	29				
1966	62	30	32				
1967	64	35	29				
1968	62	33	28		1		
1969	85	46	36	2			1
1970	124	37	50	21	6	3	7
1971	110	37	28	25	3	7	10

*No returns until 1968

This report is limited to the job satisfaction characteristics of the graduates and certain relationships between these and other selected characteristics of the graduates.

The major reasons for conducting this part of the study was to

I. Identify the manner in which the graduates viewed their present job in terms of six direct job satisfaction characteristics. These six characteristics were phrased in the following manner:

   A. What is the relationship between your present job and associate degree program?

   B. How do you view the advancement possibilities in your present job?

   C How do you view your present salary?

   D. How do you view the activities in your present job?

   E. How would you rate your performance on your present job?

   F. As compared to other aspects of your life (such as family living, social activities, civic activities, recreational activities), where would you rank the importance of your work?

II. Identify the manner in which graduates view their present situation in terms of several indirect job satisfaction characteristics, which were stated in the following manner in the questionnaire:

   A. Year associate degree received;

   B. Highest degree earned to date;

   C. Are you presently working toward another degree?

   D. Length of time between graduation and first job in months;

   E. How many times have you changed:

      1. employers;
      2. your job;
      3. your residence?

   F. Number of months employed at the first job;

G. Beginning salary (monthly before taxes and other deductions) of your first job;

H. Beginning salary of each full-time job after first job - this was analyzed only for the last job reported;

I. Of the three job orientations, which is encountered most frequently by you in your present job? a) data, b) people, c) things).

III. Identify relationships between various job satisfaction characteristics from which implications for curriculum can be identified.

IV. Proposed curriculum and other changes based upon the findings.

This report is restricted to an investigation and analysis of the job satisfaction characteristics. The other concerns listed above are the focus of several other reports in this series.

REVIEW OF RELATED RESEARCH

by

Edward Mann

The primary emphasis of this review of related research was to give support to the direct job satisfaction characteristics of the associate degree program graduates of The Pennsylvania State University. The six areas covered in the questionnaire are: 1) the relationship between their present job and their associate degree program, 2) their assessment of advancement possibilities on their present job, 3) their viewing of their present salary; 4) their judgment of the activities on their present job, 5) self rating of performance on their present job, and 6) their ranking of the importance of their work as compared to other aspects of their lives.

According to Herzberg (1957), the very term "job satisfaction" lacks adequate definition. Zaleznik (1958) states that job satisfaction is among the most difficult concepts to define, let along measure. Using Zaleznik's definition, there are two extreme points of view from which investigators may choose a framework for the study of job satisfaction. One view is to assume that satisfaction is a totality or unitary concept representing a state of mind in the individual which has no single referent. The individual's satisfaction or dissatisfaction is determined by his total situation at work and at home, in every aspect of his life. If using Zaleznik's first point of view, the study of satisfaction should attempt to understand the individual as intensively as possible.

His second point of view, in the extreme, states that an individual's satisfaction can be separated into major areas. Not only are these elements present and separable for the researcher, but the subject can consciously separate these elements and indicate relative degrees of satisfaction with each of them.

Smith et al. (1969) defines job satisfaction as feelings or affective responses to these facets of the situation. They hypothesize that these feelings are associated with a perceived difference between what is expected as a fair and reasonable return (or, when the evaluation of future prospects is involved, what is aspired to) and what is experienced, in relation to the alternatives available in a given situation. Basically, this model subsumes what is common to those posed by many others (e.g. Brown, 1959; England, Korman and Stein, 1971; England and Stein, 1961; Georgopoulus, Mahoney and Jones, 1957; Guion, 1958; Harding and Bottenberg, 1961; Jaques, 1961; Kahn and Morse, 1951; Katzell, Barrett and Parker, 1971; Lawler and Porter, 1967; Mann, 1953; Morse, 1953; Patchen, 1960, 1961; Porter, 1962; Rotter, 1960; Thomsen, 1943; Vroom, 1964; Zaleznik, Christensen, and Roethlisberger, 1958).

Job satisfaction is typically measured by means of interviews or questionnaires in which workers are asked to state the degree to which they like or dislike various aspects of their work The degree to which a person is satisfied with his job is inferred from his responses to one or more question about how he feels concerning these various aspects of his job (Vroom, 1964). Other more indirect methods have been developed (Weschler and Bernberg, 1950; Weitz and Nuckios, 1953) but they have not had very wide use (Vroom, 1964).

Unfortunately, there has been little standardization of job satisfaction measures. Most investigators (as done in the present study) "tailor-make" an instrument for the particular population they are studying (the associate degree graduates of Penn State University). There are exceptions to this, the Brayfield-Rothe job satisfaction scale (Brayfield and Rothe, 1951) and the Kerr Tear Ballot (Kerr, 1948) both

of which have had repeated use. And more recently the job Description Index developed by Smith and her associates (Smith, 1963; Hulin, Smith, Kendall and Locke, 1963; Macanlay, Smith, Locke, Kendall, and Hulin, 1963; Kendall, Smith, Hulin, and Locke, 1963; Locke, Smith, Hulin, and Kendall, 1963; and Smith and Kendall, 1963). However, investigators more commonly "adapt" old instruments or devise new ones to meet their requirements at a given time (Vroom, 1964). This practice greatly restricts the comparability of different studies and results in relatively little attention to problems of scaling and of validity and reliability.

Due to the fact that job satisfaction is being treated as a set of dimensions rather than a single dimension, there arises the problem of specifying these dimensions. How can the characteristics of work roles be divided in order to arrive at useful dimensions of job satisfaction?

According to Smith et al. (1969), to be correct, consideration would have to be given to the various dimensions of job satisfaction and the specification of these dimensions. The studies that have been done on the problem of the dimensionality of job satisfaction have indicated that job satisfaction is made up of at least five and possibly more factors. The exact number and nature of these factors vary considerably from study to study, but the results do consistently support the multidimensional notion.

Also pointed out by Smith et al. (1969) is an additional problem concerning the degree of independence of the factors which are obtained. It is true that many of the studies have indicated the presence of more than one area of job satisfaction. It is also true that those factors seem to be discriminately different from each other. They cannot,

however, be regarded as orthogonal. This obliqueness would seem to have its origins in the characteristics of jobs, the characteristics of workers, and in the questionnaires used to measure job satisfaction.

Vroom (1964) states that there are at least four possible explanations of the fact that different measures of satisfaction are positively interrelated: 1) It is possible that there are characteristics of individuals which similarly condition their reactions to objectively different aspects of the work situation. 2) It is also possible that the positive interrelationship among measures of satisfaction are due to response sets. On many satisfaction measures, a tendency to choose the first alternative, or to choose the "yes" or agree response, results in high scores indicating a high level of satisfaction. 3) A third possibility is that work situations providing one type of reward tend also to provide other types of rewards. 4) Finally, it is possible that the measures of satisfaction with different aspects of work roles are associated because they are functionally interdependent

The research necessary to determine which of these explanations is correct has not yet been carried out. Since all are intuitively plausible, it is possible that each is contributing to some portion of the common variance among measures of satisfaction (Vroom, 1964).

The literature on job satisfaction is filled with numerous attempts to list and often to estimate the relative importance of the various dimensions, elements, or factors involved in job satisfaction. The classification of these items is quite arbitrary and the number of factors considered relevant can be broken down almost indefinitely.

Systematic surveys of employee attitudes, begun in the early 1920's, developed so rapidly that in the bibliography of Herzberg,

Mausner, Peterson, and Capwell (1957) Job Attitudes: Review of Research and Opinion more than 1,500 items were listed. Research and theory concerning the nature, causes, and correlates of job satisfaction have been mushrooming since the pioneering investigations by Hoppack (1935) and Houser (1938) Barow (1969). The factors used to measure job satisfaction in these various studies do not correspond neatly with one another, but they all have some common elements. In their extensive review of the research, Herzberg et al. (1957) concluded that factor analytic studies have indicated the presence of six "relatively independent" factors: general satisfaction and morale, attitudes toward the company and its policies, satisfaction with intrinsic aspects of the job, attitudes toward the immediate supervisor, attitudes toward satisfaction of aspirations, and satisfactions with conditions of present job. Roberts (1958) did a review of literature covering all the topics related to job satisfaction done up to that time.

Since that time, Herzberg, Mausner, and Snyderman (1959) feel that the elements of the situation in which the respondent finds a source for his good or bad feelings about the job are: 1) recognition, 2) achievement, 3) possibility of growth, 4) advancement, 5) salary, 6) interpersonal relations, 7) supervision-technical, 8) responsibility, 9) company policy and administration, 10) working conditions, 11) work itself, 12) factors in personal life, 13) status, and 14) job security.

Vroom (1964) limits his job satisfaction factors to 1) supervision, 2) the work group, 3) job content, 4) wages, 5) promotional opportunities, and 6) hours of work. Whereas Smith et al. (1969) uses work, pay, promotion, supervision and co-workers as areas for analyses of job satisfaction.

Even though much of the research on job satisfaction has focused on the relationship between job satisfaction and job performance, Brayfield and Crockett (1955) concluded that there is little evidence that employee attitudes bear any simple--or, for that matter, appreciable--relationship to performance on the job. However, the purpose of this study is not to correlate job satisfaction and job performance but to assess job satisfaction for selected associate degree graduates via the six factors indicated herein.

The first of these six factors is "what is the relationship between your present job and your associate degree program?" To date the only study which has been found which uses the relationship of present job and educational background as a measure of satisfaction was done by Taves et al. (1963). Herzberg (1957) reviews eight studies which look at education as a factor in determining job satisfaction. Three of these studies (American Vocational Association, 1948; Kessler, 1954; and Scott, Dill, and Hayes, 1921) show increased satisfaction with education, however, in no case are the findings very conclusive. The five studies which fail to show any differences in job satisfaction among workers differing in amount of education are: Ash (1954), Quayle (1935), Kornhauser and Sharp (1932), Cain (1942), and Fryer (1926). Gillie (1972) stated that the curriculum followed is not related to satisfaction of community college freshmen women whereas Evans (1971) stated that job satisfaction is related to school curriculum for high school vocational students.

Due to the fact that the associate degree programs increase skills and abilities, Vroom (1964) and Tiffin and McCormick (1965) state that an individual derives satisfaction from jobs which permit him to use this knowledge.

The viewing of advancement possibilities on their present job is another factor for determining job satisfaction. Several studies have been carried out showing that advancement possibilities are a factor in determining job satisfaction (Morse, 1953; Sirota, 1959; Patchen, 1960; and Spector, 1956). Sheppard (1971) found that all workers in the discontented group see very little or no chance of promotion. Smith et al. (1969), who first attempted to group salary and promotional opportunities, felt that promotion should be looked at as a separate factor in measuring job satisfaction.

A third factor this study uses to measure job satisfaction is their viewing of their present salary. When workers are asked to describe what makes them satisfied or dissatisfied with their jobs, wages are found to be the most frequent source of dissatisfaction but the least frequent source of satisfaction (Vroom, 1964). Several follow-up studies of college graduates (Thompson, 1939; Miller, 1941; Inlow, 1951; and Barnett, Handelsman, Stewart, and Super, 1952) report that there is a high relationship between job satisfaction and income. The degree to which this is an effect limited to college graduates is quite unknown.

A conclusion of the Survey Research Center of the University of Michigan (1950) based on a number of studies, is that the amount of money earned is itself less important in determining the worker's satisfaction than is his thinking that his pay rate is fair or unfair. Centers and Cantril (1946) report that the degree to which people are satisfied with their salary goes up as their salary goes up. Lawler and Porter (1963), Smith and Kendall (1963), and Sheppard (1971) support these findings, whereas Hoppock (1935) reported no significant difference in average earnings between well-satisfied and poorly satisfied teachers.

Viewing the activities in their present job is the fourth job satisfaction variable. According to Tiffin and McCormick (1965) high satisfaction job attitudes are generally associated directly or indirectly with the job activities. Walker and Guest's study (1952) of assembly line workers in an automobile plant, found job content (activities), particularly the paced repetitive nature of the work, to be the chief factor reported as disliked about the job. In studying clerical workers Hahn and Williams (1945) found that satisfied clerical workers were significantly more interested in clerical activities as measured by the Kuder Inventory than were dissatisfied workers. DiMichael and Dabelstein (1947) correlated satisfaction with various job duties with scores on appropriate Kuder scales.

The fifth aspect of job satisfaction for this study is their rating of performance on their present job. Hoppock (1935) found that satisfied teachers more frequently said that they were making a success of their job than dissatisfied teachers. This is also consistent with Gurin, Veroff, and Feld (1960) who reported that job satisfaction was positively related to workers reports of their adequacy on their jobs.

The final determinate of job satisfaction in this study is their ranking of the importance of their work with the other aspects of their lives. Few studies focus directly on the place of the job in the total round of life (Borow, 1964). Hoppock (1935) anticipating the possibility that some persons might enjoy their work even more than their recreations, asked the workers in New Hope to state which gave them more satisfaction; their jobs, or the things they did in their spare time. Sixty-six percent answered their job. Dubin (1956) found that only one in four relatively low skilled workers could be classified as mainly job-oriented.

The exact number and structure of the factors vary from study to study for the measuring of job satisfaction. However, the approaches used have enough in common so that the various factors can be compared regardless of whether any explicit formulation of concepts are made.

ESTABLISHMENT OF THE JOB SATISFACTION ITEMS

The curriculum topics, as well as several other items in the questionnaire were obtained from the faculty in the designated curriculums. The topics submitted by faculty members in each program were tabulated and those mentioned most frequently were chosen for the specialized curriculum topics included in the questionnaire. The other items, common to all curriculums, were chosen in the same manner. The first two pages of the questionnaire consisted of these general items and covered the first four categories of information sought (present education status, employment information, job orientation characteristics, and job satisfaction characteristics). The third page of the questionnaire was earmarked for the assessment of job relevancy of selected curriculum topics.

The queries concerning job satisfaction were refined beyond the suggestions made by the faculty members. While many of the faculty members expressed interest in the relationships between curriculum and present job, the other aspects of job satisfaction were not frequently mentioned by most faculty members. The investigator felt, however, that several additional aspects of job satisfaction should be dealt with. After some consideration, it was hypothesized that the concept of job satisfaction includes a worker's feelings about advancement possibilities, salary level, job activities, self-evaluation of performance on the present job, importance of work as compared to other life aspects, as well as relationships between his educational preparation in present job Therefore, these six elements were posed as questions for the respondents to rate. Indicated below is the manner in which they were stated and the rating scales for each.

1. What is the relationship between your present job and your associate degree program? (Very high, high, medium, low, unrelated)

2. How do you view the advancement possibilities in your present job? (Highly satisfactory, moderately satisfactory, neutral, moderately unsatisfactory, highly unsatisfactory)

3. How do you view your present salary? (Highly satisfactory, moderately satisfactory, neutral, moderately unsatisfactory, highly unsatisfactory)

4. How do you view the activities in your present job? (Highly satisfactory, moderately satisfactory, neutral, moderately unsatisfactory, highly unsatisfactory)

5. How would you rate your performance on your present job? (Highly satisfactory, moderately satisfactory, neutral, moderately unsatisfactory, highly unsatisfactory)

6. As compared to other aspects of your life (such as family living, social activities, civic activities, recreational activities), where would you rank the importance of your work? (Most important, among the most important, of some importance, among the least importance, least important)

The mean value of each, as well as a number of relationships between them and other questionnaire topics are examined in the findings section.

THE SAMPLE AND SAMPLING STRATEGY

One part of the sample, the 1955 through 1969 graduates, were those used in the first phase of the follow-up study which was conducted in 1969-70 (Gillie, 1971). They were originally selected on a stratified random basis where strata were year of graduation and curriculum. Added to this was a group of the 1970 and 1971 graduation classes, chosen in the same manner. Approximately 33 percent of all graduates were selected.

After final selection of the sample and revisions of the questionnaire, it was mailed to 1,748 graduates. See Table 1 for sample distribution by curriculum and graduation year. A strategy was inaugurated (Gillie, 1971) in which a series of several follow-up letters were sent in an attempt to increase the rate of response. About 57 percent of the respondents returned their questionnaires (See Table 2) while another 4 4 percent were declared "undeliverable" by postal authorities. This entire procedure took about 4 5 weeks. The final rate of response by curriculum is shown in Table 2.

In order to determine, to some extent at least, whether those who did not respond were "different" in terms of answers to the questionnaire items, 10 percent of the nonrespondents were randomly selected and contacted by telephone. Sixty graduates were contacted in this manner, and 54 percent of them (90 percent) responded with completed questionnaires (29 EET, 20 DDT, and 6 from the other programs).

From the first 25 percent of the respondents, 54 graduates were randomly selected. Also, 54 graduates were randomly selected from the last 25 percent of the respondents. Comparisons of responses for the

TABLE 2

RESPONSE RATE BY CURRICULUM

Curriculum	Number Sent	Number Returned*	Percent Returned
Electrical-Electronics Technology (EET)	665	420	63.2%
Drafting Design Technology (DDT)	813	491	60.4%
Business (BUS)	203	48	23.6%
Retailing (RTL)	21	14	66.7%
Forestry Technology (FORT)	20	6	30.0%
Surveying Technology (SRT)	26	18	69.2%
TOTAL	1,748	997	57.3%

*This is the number of usable returns

six major job satisfaction questions between these two responding groups and the telephone follow-up group were made.

This was accomplished in the following manner: a test among the three types of groups mentioned on the six selected questions was conducted. The analysis of variance for five of the six questions showed no difference among the three groups (early respondents, late respondents, telephone respondents) In one of the analyses (question: As compared with other aspects of your life, where would you rank the importance of your work?), a difference among the three groups was established. Using a follow-up test of possible t-tests (ANOVES/ANOVUM, 1971) it was found that the telephone group differed from the early and late responding groups. The group which had the abnormal variance was the telephone group. However, the overall ANOVA which uncovered the difference among group means violated the assumption of homogeneity of variance and therefore should be interpreted with caution. This enables us to at least suspect that there were no significant differences between: a) early and late respondents; b) late respondents and nonrespondents; c) early respondents and nonrespondents, in terms of the questionnaire topics. Having identified this homogeneity we proceeded to analyze the data with no further consideration given to this point.

THE FINDINGS

I

In the first part of this section, the mean values of the responses for each of the six direct job satisfaction questions are considered. These mean values are presented by year of graduation in Tables 3 through 8 inclusive.

Variable 1: What is the relationship between your present job and your associate degree program?

From Table 3, the mean value in this relationship is found to be between 2.00 to 2.99, which can be considered a "medium" relationship for the sample for 11 of the 17 graduation years, while the remaining six groups had average response ratings in the "low" category. No one year sample placed a "high" or "very high" value to the relationship between their associate degree program and what they deemed required of them on their present job. Some might hypothesize that the highest relationship would be for the more recent graduates. This has not been the case, and in actuality, some of the lower values were found from graduates of the last five years. Contrary to what one might conclude at first glance, this may not be an indictment of the associate degree program, so much as it is indicative of the "change in plans" undergone by many of the graduates. Why would so many of them change their vocational plans upon graduation? Following are several possible reasons:

1. Job opportunities for associate degree graduates in the technology areas probably have not expanded at the same rate in which the graduates have been introduced to the labor market during the past four to five years. In several of these years, notably 1969 through 1971, opportunities for jobs related to the electronics and drafting design specialties actually decreased from earlier years. Faced with such realities,

TABLE 3

WHAT IS THE RELATIONSHIP BETWEEN YOUR PRESENT JOB AND YOUR ASSOCIATE DEGREE PROGRAM?

Year of Graduation	Mean*	Standard Deviation
1955	2.[illegible]	1.10
1956	2.69	0.93
1957	2.63	1.18
1958	2.67	[illegible]2
1959	2.68	[illegible]04
1960	2.71	1.13
1961	3.10	[illegible]2[illegible]
1962	3.23	1.08
1963	3.02	[illegible]8
1964	2.6[illegible]	[illegible]9
1965	2.65	1.09
1966	2.7[illegible]	[illegible]25
1967	2.80	[illegible]06
1968	2.92	[illegible]05
1969	3.12	[illegible]
1970	3.05	1.30
1971	3.23	[illegible]26

1 Very High
2 High
3 Medium
4 Low
5 Unrelated

these graduates may have been forced to move into other vocational areas.

2. A greater proportion of the graduates went on to work toward a baccalaureate program on a full-time basis immediately upon completion of the associate degree. This has been a very obvious trend in recent years with the rapid proliferation of bachelor degree technology programs throughout the country. Graduates who do well academically in their two-year programs are encouraged, subtly and often directly, to transfer immediately into the third year of a baccalaureate degree program. Added thrust in this direction was undoubtedly provided by the relatively poor job market opportunities, as indicated in number 1 above.

Therefore, graduates who took jobs in other fields or pursued advanced technology programs, might rate the relationship between their two-year program and the present activities as only "medium" or "low." Because of this, the investigator feels the general medium to low ratings found in answer to this query may well be more in response to the re-directed careers of the graduates rather than to any serious curriculum shortcoming.

Variable 2: How do you view the advancement possibilities in your present job?

The average response to this question, for most of the 17 graduation classes here, dwelled in the "neutral" to "moderately satisfactory" range. The ratings averaged out to be lower for the last four graduation groups than for all but two of the other classes. There is reason to suspect that this view has been strongly colored by the generally depressed opportunities for new associate degree technology graduates during the past few years, as well as to the reduced beginning salaries. It should be pointed out however that the trend for the 17 graduation groups has been to view their advancement possibilities as "neutral." Therefore,

these graduates are neither highly optimistic or pessimistic about their chances for future advancement. This finding indicates that a more careful assessment of the new associate degree technician's role in the work force needs to be made, with an eye toward determining the avenues of advancement via the occupational ladder. See Table 4 for the specific mean ratings of each graduation group. The prospect of undergoing work advancement is indeed an important aspect of overall job satisfaction, and is deserving of more direct investigation.

Variable 3: How do you view your present salary?

Table 5 depicts the average ratings for this question by the 17 graduation groups. A clear-cut trend is seen. There is a steady decrease in salary satisfaction for the last six groups, and the least satisfaction is expressed by the last three groups

It is conjectured by this investigator that technicians are caught up in the salary dilemma, as are so many other Americans. Through the mass media, particularly television, they become familiar with the great diversity in life styles and consumer goods available. Comparison of their life styles and ability to purchase the consumer items to which they become exposed can generate dissatisfaction when there is a large gap between what one "has" and what one "would like to have." The continual rise of the cost of living adds to the dilemma as their concern for the material things associated with the "good life" continues.

Furthermore, there appears to be some concrete justification for the decrease in satisfaction with present salary. This study found that first salaries for the last five graduation groups, when adjusted for the increased cost of living, has consistently declined each year. The "market value" of the new associate degree technician, when adjusted

TABLE 4

HOW DO YOU VIEW THE ADVANCEMENT POSSIBILITIES IN YOUR PRESENT JOB?

Year of Graduation	Mean*	Standard Deviation
1955	2.17	0.86
1956	2.26	1.05
1957	2.07	1.01
1958	2.04	0.99
1959	2.22	0.89
1960	2.06	0.70
1961	2.26	0.94
1962	2.11	0.84
1963	1.98	1.18
1964	2.31	1.16
1965	2.37	1.15
1966	2.15	1.07
1967	2.16	1.01
1968	2.28	1.57
1969	2.47	1.10
1970	2.36	1.14
1971	2.60	1.28

1 = Highly Satisfactory
2 = Moderately Satisfactory
3 = Neutral
4 = Moderately Unsatisfactory
5 = Highly Unsatisfactory

TABLE 5

HOW DO YOU VIEW YOUR PRESENT SALARY?

Year of Graduation	Mean*	Standard Deviation
1955	1.94	0.94
1956	2.17	0.98
1957	2.00	1.00
1958	1.94	0.83
1959	2.15	0.89
1960	2.06	0.87
1961	2.23	0.99
1962	1.98	0.76
1963	2.06	0.95
1964	2.20	1.06
1965	2.17	0.81
1966	2.09	0.89
1967	2.34	0.86
1968	2.32	0.96
1969	2.64	0.99
1970	2.62	1.12
1971	2.93	1.21

1 = Highly Satisfactory
2 = Moderately Satisfactory
3 = Neutral
4 = Moderately Unsatisfactory
5 = Highly Unsatisfactory

values of the dollar are used, appears to be going down. Should this trend continue, it is likely that students will avoid these programs. One can assume that the reduced market value signifies an oversupply of this type of graduate, since the business-industrial community has historically matched worker compensation with worker need. Perhaps educators should consider whether this is sufficient reason for reducing enrollment in these kinds of associate degree programs.

Variable 4: How do you view the activities in your present job?

The sample from the earlier graduation classes rated their activities in their present job higher in satisfaction than did the more recent graduates. As displayed in Table 6, the five most recent groups and the 1964 class expressed the least satisfaction with present activities. A total of 11 graduation groups rated present job related activities in the moderately satisfactory range.

The discrepancy between satisfaction ratings of present job activities between early and recent graduates is worthy of comment. As indicated in discussing the ratings of the first three variables, the graduates of early classes appear to be enjoying the greatest amount of job satisfaction. Perhaps job longevity of itself increases the chances of workers to be selected for job related activities which are comparatively more satisfying to them. Although this appears to be logical, it should be noted that it is purely conjecture as no part of the study was designed to obtain such information from the respondents. Also in the realm of conjecture is that the recent job placement difficulties encountered by the graduates may have resulted in a large number of them accepting what they considered "second-rate" jobs. Should this indeed be the case, the likelihood of that worker experiencing dissatisfaction

TABLE 6

HOW DO YOU VIEW THE ACTIVITIES IN YOUR PRESENT JOB?

Year of Graduation	Mean*	Standard Deviation
1955	1.83	0.71
1956	1.57	0.79
1957	1.68	0.79
1958	1.59	0.66
1959	1.90	0.84
1960	1.85	0.85
1961	1.82	0.79
1962	1.82	0.81
1963	1.80	1.01
1964	2.20	1.08
1965	1.88	0.88
1966	1 77	0 89
1967	2 16	0 98
1968	2 05	1.02
1969	2.36	1 06
1970	2 21	1.09
1971	2.26	1.12

1 = Highly Satisfactory
2 = Moderately Satisfactory
3 = Neutral
4 = Moderately Unsatisfactory
5 = Highly Unsatisfactory

with job related activities would be higher. As stated in conjunction with our analysis of the earlier three variables, there are clear indications of reduced job satisfaction, particularly on the part of the more recent graduation classes. This finding warrants further investigation, which could hopefully point to directions for remediation.

Variable 5: How would you rate your performance on your present job?

The ratings for the 17 groups on this variable, along a five point scale from highly satisfactory to highly unsatisfactory, are shown in Table 7. This variable received moderately satisfactory ratings from all groups and no discernible trend as a function of graduation year was observed. The results indicate that graduates as a whole considered themselves as performing reasonably well in their present jobs. Therefore, this element of job satisfaction seemed to have been achieved to a moderately satisfactory degree by most of the sample, regardless of the length of time out of school.

Variable 6: As compared to other aspects of your life (such as family living, social activities, civic activities, and recreational activities), where would you rank the importance of your work?

These results are similar to the preceding one. The graduates rated their job as closer to "among the most important" than to "of some importance." This overall rating indicates, in the opinion of this investigator, that most of the graduates had a "professional" view of their work roles. This seemed to be consistent among the 17 graduation groups, as displayed in Table 8.

TABLE 7

HOW WOULD YOU RATE YOUR PERFORMANCE ON YOUR PRESENT JOB?

Year of Graduation	Mean*	Standard Deviation
1955	1.56	0.62
1956	1.52	0.67
1957	1.46	0.55
1958	1.44	0.54
1959	1.59	0.65
1960	1.52	0.58
1961	1.51	0.51
1962	1.48	0.51
1963	1.47	0.54
1964	1.80	0.79
1965	1.57	0.56
1966	1.61	0.58
1967	1.59	0.61
1968	1.62	0.58
1969	1.72	0.63
1970	1.74	0.76
1971	1.67	0.62

1 = Highly Satisfactory
2 = Moderately Satisfactory
3 = Neutral
4 = Moderately Unsatisfactory
5 = Highly Unsatisfactory

TABLE 8

AS COMPARED TO OTHER ASPECTS OF YOUR LIFE (SUCH AS FAMILY LIVING, SOCIAL ACTIVITIES, CIVIC ACTIVITIES AND RECREATIONAL ACTIVITIES), WHERE WOULD YOU RANK THE IMPORTANCE OF YOUR WORK?

Year of Graduation	Mean*	Standard Deviation
1955	2.11	0.47
1956	2.13	0.63
1957	1.95	0.54
1958	2.11	0.46
1959	2.25	0.58
1960	2.21	0.64
1961	2.15	0.59
1962	2.25	0.61
1963	2.09	0.67
1964	2.33	0.83
1965	2.07	0.71
1966	2.15	0.62
1967	2.27	0.76
1968	2.36	0.63
1969	2.38	0.83
1970	2.42	0.90
1971	2.48	0.92

1 = Most important
2 = Among the most important
3 = Of some importance
4 = Among the less important
5 = Least important

II

In addition to the six direct variables which comprise the overall job satisfaction factor, several variables thought to be indirectly related to job satisfaction are considered. The following paragraphs, in association with Tables 9 through 17, report their distribution.

Indirect Variable 1: Highest degree earned to date.

Table 9 displays the extent to which the sample, by graduation year, earned degrees beyond the associate level. Since 1.00 indicates the associate level and 2.00 represents the baccalaureate level, a decimal value between these two values is a good approximation of the percentage of that group that have acquired a bachelor's degree since graduation. As high as 25 percent of the sample earned baccalaureate degrees (or higher) for five of the 17 graduation groups. Of special interest is that the 1967 through 1969 graduation groups have acquired advanced degrees in the same proportion as the 1964 through 1968 classes. The implication is that a greater proportion of the more recent classes are going on to further study immediately upon graduation. This is consistent with the national trend of associate degree technicians immediately going on to earning the bachelor of technology degree, rather than take immediate employment.

The fact that a substantial proportion of technician graduates use the associate degree as their entree to a bachelor degree program has implications for curriculum planners. One of these, in the estimation of this investigator, is that many of these graduates are not satisfied to take on an associate degree level job, and would rather

TABLE 9

HIGHEST DEGREE EARNED TO DATE

Year of Graduation	Mean*	Standard Deviation
1955	1.17	0.38
1956	1.09	0.42
1957	1.22	0.48
1958	1.26	0.56
1959	1.29	0.59
1960	1.14	0.40
1961	1.33	0.58
1962	1.30	0.59
1963	1.27	0.53
1964	1.18	0.39
1965	1.18	0.39
1966	1.18	0.39
1967	1.16	0.37
1968	1.15	0.36
1969	1.19	0.39
1970	1.01	0.09
1971	1.00	0.0

1 = Associate
2 = Bachelor's
3 = Master's
4 = Doctorate

move immediately into preparation for a professional level position that acquisition of the bachelor's degree would afford them. Another implication for curriculum planners is perhaps the content of the specialization courses in the program should be rethought with this apparent student objective in mind. Furthermore, planners need also to seek answers to the question of whether or not the associate degree technician's role in the work force is becoming less important as the bachelor of technology graduate becomes more commonplace.

Indirect Variable 2: Are you presently working toward another degree?

The assumption that many graduates are working toward another degree is not apparent from the data displayed in Table 10. The table indicates that the great majority of the sample is not working toward another degree at the time of the query. But this includes those who already earned a degree beyond the associate level at that time, thereby masking the true trend reflected in the variable 1 results. The number reportedly not working toward another degree for the last five classes is larger than expected.

Indirect Variable 3: Length of time between graduation and first job (in months).

The waiting period between program completion and first job for each of the graduation groups is shown in Table 11. With the exception of the first three groups, the average waiting period exceeded one month. The mean waiting period was greater than three months for seven of the groups. This should be interpreted with caution however, since a waiting period of three months or less may actually be by choice of the graduate, who may have elected to enjoy a "summer vacation" before reporting to his first post-associate degree job. Furthermore, the fact that waiting

TABLE 10

ARE YOU PRES[illegible]LY WORKING TOWARD ANOTHER DEGREE?

Year of Graduation	Mean*	Standard Deviation
1955	1.94	0.24
1956	1.96	0.21
1957	1.80	0.40
1958	1.91	0.29
1959	1.85	0.36
1960	1.94	0.24
1961	1.74	0.44
1962	1.77	0.42
1963	1.78	0.42
1964	1.76	0.43
1965	1.75	0.44
1966	1.7[illegible]	0.46
1967	1.72	0.45
1968	1.79	0.41
1969	1.72	0.45
1970	1.86	0.34
1971	1.96	0.19

1 - Yes
2 = No

TABLE 11

LENGTH OF TIME BETWEEN GRADUATION AND FIRST JOB (IN MONTHS)

Year of Graduation	Mean	Standard Deviation
1955	0.39	0.61
1956	0.26	0.45
1957	0.59	0.87
1958	5.44	11.86
1959	3.51	8.04
1960	1.60	6.62
1961	3.26	10.33
1962	3.48	12.85
1963	2.60	8.98
1964	2.96	8.64
1965	3.32	10.78
1966	3.74	12.18
1967	1.39	4.81
1968	1.33	4.00
1969	3.22	7.36
1970	1.27	2.88
1971	1.71	2.38

times are relatively short doesn't necessarily mean suitable jobs were found. It is conceivable, particularly for the groups since 1969, that some graduates accepted offers that were considerably less desirable than their first choice in the interest of obtaining early employment.

Indirect Variable 4: How many times have you changed employers?

As would be expected, the greatest average number of employer changes were experienced by the earlier graduation groups, and a trend toward lower means for the more recent classes is obvious (see Table 12). A review of this distribution indicates the frequency of employer changes for the sample is likely to be typical of workers at the associate degree education level.

Indirect Variable 5: How many times have you changed your job?

This variable is related to, but different from, the number of employer changes, since job and employer changes may not coincide in some cases. Graduates employed by a large concern can likely change jobs within the overall structure of the same com[illegible] -which could be a mere transfer type situation (a lateral type job movement) or an actual job promotion (a vertical type job movement).

The reader should be cautioned about the interpretation of the job change variable. It is difficult to determine why an individual changes from one job to another. In those cases where it is voluntary, the common assumption is that it is an attempt by the employee to improve his job situation in the form of increased salary, position advancement, and/or better job environment. While this may be true in some and perhaps even most instances, it is logical to assume that not all workers improve their job situation when they undergo a job change. Furthermore, it is common knowledge that many so-called voluntary job

TABLE 12

HOW MANY TIMES HAVE YOU CHANGED EMPLOYERS?

Year of Graduation	Mean	Standard Deviation
1955	2.00	2.25
1956	1.35	1.47
1957	1.41	1.70
1958	2.17	1.86
1959	2.56	2.23
1960	1.37	1.53
1961	2.13	1.73
1962	1.18	1.47
1963	1.58	1.65
1964	1.93	2.47
1965	1.13	1.16
1966	0.65	0.91
1967	0.56	0.89
1968	0.67	1.03
1969	0.42	0.85
1970	0.42	0.85
1971	0.37	0.83

TABLE 13

HOW MANY TIMES HAVE YOU CHANGED YOUR JOB?

Year of Graduation	Mean	Standard Deviation
1955	2.78	2.13
1956	1.83	1.90
1957	2.46	2.47
1958	2.69	1.86
1959	2.80	2.26
1960	2.21	2.40
1961	2.33	1.77
1962	1.80	1.47
1963	2.46	2.40
1964	2.51	3.13
1965	1.75	1.66
1966	0.95	1.23
1967	0.92	1.13
1968	0.[illegible]9	1.34
1969	0.49	0.85
1970	0.51	0.94
1971	0.42	0.86

changes are in fact privately encouraged by the employer. Regardless of the specific reason, it is also reasonable to assume that many workers change jobs in the hopes of relocating into a new situation that will provide them with greater personal job satisfaction. Although such considerations are of great interest, the data in this study only tangentially alludes to them.

As in the previous case, the older graduates experienced the greatest number of job changes, and a clear trend in which there is a reduced frequency of job changing for the most recent groups is displayed in the distribution of Table 13.

Indirect Variable 6: How many times have you changed your residence?

Change of residence is related to job changing in some cases in that it may be the result of having to relocate for new job "or moving up" to a larger residence whose acquisition was made possible by an increase in salary associated with a job promotion. However, the real reason for a given residence change (associated with or without a job change) is sufficiently masked in this study to preclude any attempt to assess actual causes, and we restrict our presentation to reporting the actual findings.

The relationship between graduation year and the number of residence changes, as in the two preceding variables, varies directly with the number of years since graduation. This trend is an obvious one, and is displayed in Table 14.

Indirect Variable 7: Number of months employed on first job.

The distribution of this variable for the 17 graduation classes is shown in Table 15. It is apparent that the graduates sampled in this study remained on their first job for a reasonably long time. Looking

TABLE 14

HOW MANY TIMES HAVE YOU CHANGED YOUR RESIDENCE?

Year of Graduation	Mean	Standard Deviation
1955	3.00	1.82
1956	2.26	2.53
1957	2.24	2.01
1958	2.59	2.03
1959	2.98	2.09
1960	2.67	1.76
1961	3.03	2.56
1962	3.21	3.25
1963	3.02	1.86
1964	2.62	2.03
1965	2.27	2.02
1966	2.05	1.96
1967	1.89	1.60
1968	1.64	1.63
1969	1.07	1.22
1970	0.86	0.95
1971	0.69	1.83

TABLE 15

NUMBER OF MONTHS EMPLOYED AT FIRST JOB

Year of Graduation	Mean	Standard Deviation
1955	69.61	77.85
1956	70.87	73.89
1957	87.10	76.60
1958	59.26	64.33
1959	44.54	46.07
1960	71.00	54.86
1961	47.92	44.62
1962	65.75	40.92
1963	42.84	34.27
1964	38.22	36.52
1965	39.95	31.59
1966	41.87	26.71
1967	37.45	19.34
1968	28.80	16.41
1969	19.21	12.29
1970	16.48	8.46
1971	9.47	11.68

at those groups that have been in the work force for five or more years (1965 through 1955) the average first job tenure exceeded three years in all cases and four years in six of the 11 groups between 1955 through 1965.

There is a possible relationship between length of time on first job and satisfaction with first job, but that is not accessible from the data obtained here Also, it appears logical to assume that a lengthy stay on any job is indicative of an overall satisfaction with the kind of work that individual is doing. Although this is a nonmeasurable implication, it is an interesting conjecture with some logical basis.

Indirect Variable 8: Beginning salary (monthly before taxes and other deductions) of your first job.

Table 16 shows the first job beginning salary (adjusted for the changing purchasing power of the dollar) for the 17 groups. The initial salary of a new worker is likely to have considerable influence on his satisfaction with that particular job and the overall trade in which he has entered (i.e. engineering technology in the case of EET and DDT graduates). Stating this in a positive manner: A technician graduate who views his salary as adequate to meet his perceived economic needs will more likely be satisfied with that specific job and with the overall specialty area for which he was prepared.

The intial first job salary for the last five graduation classes, when compared to the earlier groups, indicated an overall downward trend. As stated earlier, this may be partially due to the downturns in the national economy and the correspondingly reduced need for associate degree technicians of these types during those years. Regardless of the reasons, however, continued downward trends in salaries will likely reduce the attraction of these occupations. Also, it seems reasonable to

TABLE 16

BEGINNING SALARY (MONTHLY BEFORE TAXES AND OTHER DEDUCTIONS) OF YOUR FIRST JOB*

Year of Graduation	Mean (Dollars)
1955	398
1956	446
1957	433
1958	370
1959	431
1960	425
1961	434
1962	461
1963	490
1964	447
1965	506
1966	501
1967	531
1968	499
1969	529
1970	452
1971	383

*Adjusted purchasing power of the dollar.
Source: U. S. Bureau of the Census. Statistical Abstract of the United States: 1972 (93D Edition), Washington, D.C.: 1972 p.340.

assume that reduced beginning salaries places the workers caught up in this dilemma in an unfavorable position in many other ways, including reduced satisfaction with their present job and overall trade or specialty area.

Indirect Variable 9: Of the three orientations (a)data, b) people, c) things), which is encountered most frequently by you in your present job?

Table 17 displays the distribution of overall present job orientations of the sample by year of graduation. A remarkable consistency is found: The overall orientation of these graduates, for all 17 groups, is clearly toward the people related job tasks. These were identified in the questionnaire by the following terms: supervising, serving, mentoring, instructing, persuading, negotiating, and speaking-signaling. This departs somewhat from the findings of the previous study by the investigator in that only the graduates of the earlier classes identified this as their major orientation at that time. The selection of primary job tasks within this category indicates that technicians perceive their dealings with other persons as being the major orientation in their present jobs.

TABLE 17

OF THE THREE ORIENTATIONS (a) DATA, b) PEOPLE, c) THINGS, WHICH IS ENCOUNTERED MOST FREQUENTLY BY YOU IN YOUR PRESENT JOB?

Year of Graduation	Mean	Standard Deviation
1955	1.78	0.65
1956	1.82	0.72
1957	1.78	0.61
1958	1.82	0.62
1959	1.75	0.60
1960	1.77	0.73
1961	1.80	0.70
1962	1.66	0.68
1963	1 84	0.74
1964	1.58	0.75
1965	1.78	0 76
1966	1 60	0.78
1967	1.73	0 82
1968	1 82	0.85
1969	1.88	0.79
1970	1.89	0.85
1971	1.99	0.87

1 = Data
2 = People
3 = Things

III

A search for significant relationships between the six direct job satisfaction questions was then conducted by utilization of a linear multiple regression technique (Hallberg, 1969). Twenty-two significant relationships were established. They are as follows:*

1. (See Table A) On the average, those graduates who indicated the highest relationship between their associate degree program and their present job, also

   A. viewed their present salary with highest degree of satisfaction;

   B. viewed their present job activities as highly satisfactory;

   C. ranked their work as compared to other aspects of their life, as most important.

2. (See Table B) On the average, those graduates who view their present job advancement possibilities as highly satisfactory, also

   A. viewed their present salary as highly satisfactory;

   B. viewed activities in their present job as highly satisfactory;

   C. ranked their work as compared to other aspects of their life as most important.

3. (See Table C) On the average, those graduates who viewed their present salaries as highly satisfactory, also

   A. indicated a very high relationship between present job and associate degree programs;

   B. viewed their present job advancement possibilities as highly satisfactory;

   C. viewed their present job activities as highly satisfactory;

   D. ranked their work as compared to other aspects of their life as most important.

*Tables A through L are presented in the Appendix.

4. (See Table D) On the average, those graduates who were highly satisfied with their present job activities, also

   A. indicated a high relationship between present job and associate degree program;

   B. viewed advancement possibilities on their present job as highly satisfactory;

   C. viewed their present salary as highly satisfactory;

   D. rated present job performance as highly satisfactory;

   E. ranked work, as compared to other aspects of their life, as most important.

5. (See Table E) On the average, those graduates who rated their performance on their job as highly satisfactory, also

   A. were highly satisfied with present job activities;

   B. ranked their job as compared to other aspects of their life, as most important.

6. (See Table F) On the average, those graduates who ranked their work as the most important aspect of their lives, also

   A. indicated a high relationship between their associate degree program and their present job;

   B. viewed [illegible] cement possibilities on their present job [illegible] factory;

   C. viewed [illegible] nt salary as highly satisfactory;

   D. viewed their present job activities as highly satisfactory;

   E. rated their present job performance as highly satisfactory.

IV

Next, a search for significant relationships between each of the six job satisfaction major topics and several indirect job satisfaction variables was conducted. The same linear multiple regression technique (Hallberg, 1969) was utilized. A total of 19 additional relationships were found. They are as follows:

7. (See Table G) On the average, those graduates expressing a high relationship between their associate degree program and present job, also

   A. were earlier graduates;

   B. had the associate degree as their highest earned degree to date;

   C. had the highest beginning first job salaries.

8. (See Table H) On the average, those graduates who viewed their advancement possibilities as highly satisfactory, also

   A. experienced the shortest length of time between graduation and acquisition of first job;

   B. remained on their jobs for a greater length of time;

   C. had the highest starting salary on present job.

9. (See Table I) On the average, those graduates who viewed their present salary as highly satisfactory, also

   A. were earlier graduates;

   B. were among those whose highest earned degree is the associate degree;

   C. were among those presently working toward another degree;

   D. had a fewer number of employers;

   E. had a higher beginning salary on their first job;

   F. had higher beginning salaries on their present job.

10. (See Table J) On the average, those graduates who viewed their present job related activities as highly satisfactory, also

    A. were earlier graduates;

    B. were those who had changed employers less frequently;

    C. had a higher beginning salary on their present job.

11. (See Table K) On the average, those graduates who rated their performance on their present job as highly satisfactory, also

    A. were from among the earlier graduates;

    B. had changed jobs a greater number of times.

12. (See Table L) On the average, those graduates who ranked the importance of work with respect to other aspects of their life as "most important," also

    A. were the earliest graduates;

    B. had the highest beginning salaries for first jobs.

CONCLUSIONS, IMPLICATIONS, AND SUGGESTIONS

The ratings assigned to the six direct job satisfaction variables by the respondents point to some important conclusions and implications. These are discussed in this section, and two major suggestions are presented for consideration by curriculum planners.

The more recent graduates, most notably those from the last five graduation years, assigned relatively unimpressive ratings to the question "What is the relationship between your present job and your associate degree program? The comparatively low rating of these responses from the more recent graduates point to a discrepancy between their college program preparation and present job requirements. It seems that reasons for this gap need to be identified. Once the causes are uncovered, the ultimate step is for faculty to incorporate the curriculum changes deemed necessary to bring program preparation and job requirements closer together.

Suggested is that a query directed to this problem be made of the more recent graduates. The proposed investigation should seek to identify the curriculum items deemed most important to job satisfaction by the graduates. Such an inquiry must necessarily go beyond assessing the relevancy of the topics presently included in the associate degree program. The kind of items that ought to be considered for inclusion in the proposed special assessment, in addition to rating the relevancy of present program topics, should include

1. the addition of other specialty topics not presently found within the curriculum;

2. topics dealing with the development and improvement of

interpersonal skills (since it was found that most of the graduates viewed their major job tasks as "people oriented";

3. courses and topics that deal with other academic areas not usually given serious consideration in a vocationally oriented associate degree program (particularly those that are more readily transferable to baccalaureate programs since a considerable number of the graduates do go on to further degree-credit studies).

The results of the proposed inquiry could be considered as a basis for possible revision of the associate degree curriculums with which the study is concerned.

The second major job satisfaction variable (How do you view the advancement possibilities in your present job?) was rated lower by the last four graduation groups. As indicated earlier, the relatively depressed employment opportunities during the last four years (i.e. since 1968) may be the major factor for this reduced rating. However, if the fact is that such graduates do encounter difficulty in obtaining jobs in which they view their chances of advancement as good, then serious consideration should be given to curtailing further enrollment in these programs until their kind of vocational preparation is in greater demand by society (as manifested by perceived advancement possibilities). This is reinforced by the findings for the third major job satisfaction variable (How do you view your present salary?), where the last six graduation groups display progressively less satisfaction with their present salary. Reasons for this are real, in that it has been found that the last several graduation classes have accepted progressively lower beginning salaries. It can be assumed, in the opinion of this investigator, that the reduced attractiveness for these worker types in the labor market vis-a-vis beginning salaries is

indicative of the oversupply of these types of associate degree graduates. From this, one can logically suggest that curriculum planners give serious consideration to reducing enrollment in these programs.

Difficulty in getting a satisfactory job with good salary obviously colors the fourth major job satisfaction variable. The last five classes, who are most intensely encountering the difficulties just mentioned, also expressed the lowest level of satisfaction with their present job. Although an individual may hope to later "move up" to a job which provides greater job satisfaction, one wonders if other employment preparation might have introduced these same individuals into more satisfying jobs at the onset.

The last two job satisfaction variables (rating of performance on present job and the ranking of importance of their work as compared to other aspects of their life) were rated relatively uniformly by graduates of all classes. Therefore, these two job satisfaction variables were apparently not affected by the job placement dilemma described in the preceding paragraph. The results derived from the last two major job satisfaction variables do not furnish us with a basis for other recommendations, as was the case with the ratings of the first four variables.

We can look at some other aspects of the findings. Those graduates who perceived the relationship between their program and present job as highly satisfactory tended to be most satisfied with their present salary, present job activities, and considered their work as one of the most important aspects of their life. In other words, those who were fortunate enough to obtain what they perceived as a "good job" were happiest with their situation (as seen through the three factors just

mentioned). The same can be said for those who were quite satisfied with the advancement possibilities in their present job, and those who considered their present job performance as highly satisfactory. These relationships point to the fact that as far as jobs are concerned, all the nappy elements apparently occur together and it seems to hinge on being able to procure a job in line with their associate degree training. This brings us back to our earlier recommendation that not finding employment suitable for one's education or training is sufficient reason to give serious consideration to reducing the number of individuals being prepared for such jobs. The sense of "unfulfillment" that apparently comes when not being able to find a job for which one is trained and psychologically prepared to enter may be a source of lower job satisfaction in the substitute situation. Perhaps it is better to not prepare them in that job area. With the help of thorough vocational counseling, such persons can likely be placed in associate degree programs that are compatible with their abilities, interests, and the viable demands of the labor market at that time.

Further indications that the more recent graduates are not too successful in finding jobs related to their training was also found in that the older graduates who still had only the associate degree were those indicating the highest relationship between their jobs and college program. The older graduates, furthermore, tended to be more satisfied with their present salary, present job activities, and present job performance. Therefore, we see that the older graduates, who entered the labor market when the demands for technicians were stronger, appear to be better placed in their employment with regard to the job satisfaction variables at this point in time. It's the more recent graduates who are not being served to the height of their job satisfaction expectations.

In conclusion, the findings reported herein and the implications derived from them, lead to the following two major suggestions:

1. A study directed to graduates of these curriculums of the last five years be conducted for the purpose of:

   A. Identifying the curriculum topics these graduates feel would have increased the relationship between their associate degree program and present job. This should include other specialized topics not found in the present curriculums, topics designed to improve the transferability of the entire curriculum into a baccalaureate degree program.

   B. Revision of the curriculums, based on the established findings above. This would include special feedback conferences--workshops conducted by faculty leaders for the faculty to establish concretely how the courses are to be changed to accommodate these needs.

2. The curriculums examined (EET, DDT, BUS, RTL, SRT, FORT) should be carefully reviewed with an eye toward substantially reducing enrollments until more complete verification of the need for associate degree graduates of these programs is established.

REFERENCES

American Vocational Association, Committee on Research Publications. Factor Affecting the Satisfaction of Home Economics Teachers. Washington, D.C.: AVA, 1948, Research Bulletin No. 3.

Ash, P. "The SRA Employee Inventory--A Statistical Analysis." Personnel Psychology, 1954, 7.

Barnett, G. J., Handelsman, I., Stewart, L. H., and Super, D. E. "The Occupational Level Scale as a Measure of Drive." Psychology Monograph, 1952, 66, No. 10.

Borow, H. Man in a World at Work. Boston: Houghton Mifflin Company, 1964.

Brayfield, A. H., and Rothe, H. F. "An Index of Job Satisfaction. Journal of Applied Psychology, 1951, 35.

Brayfield, A. H., and Crockett, W. H. "Employee Attitudes and Employee Performance." Psychological Bulletin, 1955 52.

Brown, H. B. "The Differential Job Satisfaction of English Migrants and New Zealanders." Occupational Psychology, 1959, 33.

Cain, P. A. "Individual Differences in Susceptibility to Monotony." Unpublished doctoral dissertation, Cornell University, 1942.

Centers, R. and Cantril, H. "Income Satisfaction and Income Asipration." Journal of Abnormal and Social Psychology, 1946, 41.

DiMichael, S. G. and Dabelstein, D. H "Work Satisfaction and Efficiency of Vocational Rehabilitation Counselors as Related to Measured Interests." American Psychologist, 1947, 2.

Dubin, R. "Industrial Worker's World: A Study of the 'Central Life Interests' of Industrial Workers." Social Problems, 1956, 3.

England, G. W., Korman, A. K., and Stein, C. I. "Overcoming Contradictions in Attitude Surveys--The Need for Relevant Attitude Norms." Personnel Psychology, 1961, 14.

England, G. W., and Stein, C. I. "The Occupational Reference Group--A Neglected Concept in Employee Attitude Studies." Personnel Psychology, 1961, 14.

Evans, R. N. Foundations of Vocational Education. Columbus: Charles E. Merrill Publishing Company, 1971.

Fortran IV ANOVES/ANOVUM. University Park, Pa.: The Pennsylvania State University, Computation Center, Revised 1971.

Fryer, Douglas. "Industrial Dissatisfaction." Industrial Psychology, 1926, 1.

Georgopoulus, B. S., Mahoney, G. M., and Jones, N. W., Jr. "A Path-Goal Approach to Productivity." Journal of Applied Psychology, 1957, 41.

Gillie, A. C., Sr. The Differential Effects of Selected Programs on the Performance, Degree of Satisfaction, and Retention of Community College Women Students. University Park, Pa.: The Pennsylvania State University, Department of Vocational Education, October 1972.

Gill... A. C., Sr. Pennsylvania State University Associate Degree ...nician Graduates: Some Demographic Variables. University Park, Pa.: The Pennsylvania State University, Department of Vocational Education, May 1971.

Guion, R. M. "Industrial Morale (a symposium): 1. The Problem of Terminology." Personnel Psychology, 1958, II.

Gurin, G., Veroff, J., and Feld, S. Americans View Their Mental Health. New York: Basic Books, 1960.

Hahn, M. E., and Williams, C. T. "The Measured Interests of Marine Corps Women Reservists." Journal of Applied Psychology, 1945, 29.

Hallberg, M. C. "Statistical Analysis of Single Equation Stochastic Models using the Digital Computer." University Park, Pa.: The Pennsylvania State University, Department of Agricultural Economics and Rural Agriculture Experiment Station, 1969.

Harding, F. D., and Bottenberg, R. A. "Effect of Personal Characteristics on Relationships Between Attitudes and Job Performance." Journal of Applied Psychology, 1961, 45.

Herzberg, F., Mausner, B., Peterson, R. O., and Capnell, D. F. Job Attitudes: Review of Research and Opinion. Pittsburgh: Psychological Service of Pittsburgh, 1957.

Herzberg, F., Mausner, B., and Snyderman, B. The Motivation to Work (2nd Edition). New York: Wiley, 1959.

Hoppock, R. Job Satisfaction. New York: Harper and Brothers, 1935.

Houser, J. D. What People Want from Business. New York: McGraw-Hill Book Company, 1938.

Hulin, C. L., Smith, P. C., Kendall, L. M., and Locke, E. A. "Cornell Studies of Job Satisfaction; II: Model and Method of Measuring Job Satisfaction." Unpublished manuscript, 1963.

Inlon, G. M. "Job Satisfaction of Liberal Arts Graduates." Journal of Applied Psychology, 1951, 35.

Jaques, E. Equitable Payment. New York: Wiley, 1961.

Kahn, R. L., and Morse, N. C "The Relationship of Productivity to Morale." Journal of Social Issues, 1971, 7.

Katzell, R A., Barrett, R. S., and Parker, T C. "Job Satisfaction, Job Performance and Situational Characteristics." Journal of Applied Psychology, 1961, 45.

Kendall, L. M., Smith, P. C., Hulin, C. L. and Locke, E. A. "Cornell Studies of Job Satisfaction; IV: The Relative Validity of the Job Descriptive Index and other Methods of Measurement of Job Satisfaction." Unpublished manuscript, 1963.

Kerr, W. A. "On the Validity and Reliability of the Job Satisfaction Tear Ballot." Journal of Applied Psychology, 1948, 32.

Kessler, M. S. "Job Satisfaction of Veterans Rehabilitated under Public Law 16." Personnel and Guidance Journal, 1954, 33.

Kornhanser, A. W., and Sharp, A. A. "Employee Attitudes: Suggestions from a Study in a Factory." Personnel Journal, 1932, 10.

Lawler, E. E., III, and Porter, L. W. "Antecedent Attitudes of Effective Managerial Performance." Organizational Behavior and Human Performance, 1967, 2.

Locke, E. A., Smith, P. C., Hulin, C. L., and Kendall, L. M. "Cornell Studies of Job Satisfaction; V: Scale Characteristics of the Job Descriptive Index." Unpublished manuscript, 1963.

Macaulay, D. A., Smith, P. C., Locke, E. A., Kendall, L. M., and Hulin, C. L. "Cornell Studies of Job Satisfaction; III: Convergent and Discriminant Validity for Measures of Job Satisfaction by Rating Scales " Unpublished manuscript, 1963.

Mann, F. C. "A Study of Work Satisfactions as a Function of the Discrepancy Between Inferred Aspirations and Achievement." Unpublished doctoral dissertation. Ann Arbor: University of Michigan, 1953.

Miller, D. C "Economic Factors in the Morale of College Trained Adults." American Journal of Sociology, 1941, 47.

Morse, N. C. "Satisfaction in the White-Collar Job." Ann Arbor: University of Michigan Press, 1953.

Patchen, M. "Absence and Employee Feelings About Fair Treatment." Personnel Psychology, 1960, 13.

Patchen, M. The Choice of Wage Comparisons. Englewood Cliffs: Prentice-Hall, 1961.

Porter, L. W. "Job Attitudes in Management; 1: Perceived Deficiencies in Need Fulfillment as a Function of Job Level." Journal of Applied Psychology, 1962, 46.

Quayle, M. S. A Study of Some Aspects of Satisfaction in the Vocation of Stenography. New York: Columbia University, Teachers College, 1935.

Robinson, H. A. "Job Satisfaction Researches of 1958." The Personnel and Guidance Journal, 1959, 37.

Rotter, J. B. "Some Implications of a Social Learning Theory for the Prediction of Goal Directed Behavior from Testing Procedures." Psychological Review, 1960, 67.

Sheppard, H. L. "Discontented Blue-Collar Workers - A Case Study." Monthly Labor Review, April 1971.

Sirota, D. "Some Effects on Promotional Frustration on an Employees' Understanding of, and Attitudes Toward, Management." Sociometry, 1959, 22.

Smith, P. C. "Cornell Studies of Job Satisfaction; I: Strategy for the Development of a General Theory of Job Satisfaction." Unpublished manuscript, 1963.

Smith, P. C., and Kendall, L. M. "Cornell Studies of Job Satisfaction; VI: Implications for the Future." Unpublished manuscript, 1963.

Smith, P. C., Kendall, L. M., and Hulin, C. L. The Measurement of Satisfaction in Work and Retirement. Chicago: Rand McNally and Company, 1969.

Spector, A. J. "Expectations, Fulfillment and Morale. Journal of Abnormal and Social Psychology, 1956, 52.

Survey Research Center. "Effective Morale, Part 3." Fortune, 1950, 42, No. 8.

Taves, M. J., Corwin, R. G., and Haas, J. E. Role Conception and Vocational Success and Satisfaction. Bureau of Business Research Monograph No. 112. Columbus: The Ohio State University, Bureau of Business Research, College of Commerce and Administration

Thomson, W. A. "Eleven Years After Graduation." Occupations, 1939, 17.

Thomsen, A. "Expectation in Relation to Achievement and Happiness " Journal of Abnormal and Social Psychology, 1943, 38.

Tiffin, J. and McCormick, E. J. Industrial Psychology (5th Edition). Englewood Cliffs: Prentice-Hall, Inc., 1965.

Vroom, V. Work and Motivation. New York: Wiley, 1969.

Walker, C. R., and Guest, R. H. The Man on the Assembly Line. Cambridge & Harvard University Press, 1952.

Weitz, J. and Nuckols, R. C. "The Validity of Direct and Indirect Questions in Measuring Job Satisfaction." Personnel Psychology, 1953, 6.

Weschler, I. R., and Berberg, R. E. "Indirect Methods of Attitude Measurement." International Journal of Opinion and Attitude Research, 1950, 4.

Zaleznik, A., Christensen, C. R., and Roethisberger, F. J. The Motivation, Productivity, and Satisfaction of Workers: A Prediction Study. Boston: Harvard Business School, 1958.

APPENDICES

TABLE A

DEPENDENT VARIABLE	INDEPENDENT VARIABLES			Intercept	R^2	Significance of F - Ratio[B]
	View of Present Salary	View Activities in Present Job	Rank Importance of Work with Other Aspects of Their Lives			
Relationship between present job and associate degree program	0.13*** (0.04)[A]	0.19*** (0.04)	0.12 (0.06)	1.92 (0.13)	0.07	0.01

*Significant at .05 Level
**Significant at .01 Level
***Significant at .001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 Level, therefore the restricted model was calculated.

TABLE B

DEPENDENT VARIABLE	INDEPENDENT VARIABLES: View of Present Salary	View Activities on Present Job	Rank Importance of Work With Other Aspects of Their Lives	Intercept	R^2	Significance of F - Ratio[B]
View Advancement Possibilities on Present Job	0.34*** (0.03)[A]	0.32*** (0.03)	0.17*** (0.04)	0.45 (0.10)	0.33	0.001

*Significant at .05 Level
**Significant at .01 Level
***Significant at .001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 Level, therefore the restricted model was calculated.

TABLE C

DEPENDENT VARIABLE	INDEPENDENT VARIABLES				Intercept	R^2	Significance of F - Ratio[B]
	Relationship Between Present Job and Associate Degree Program	View Advancement Possibilities on Present Job	View Activities on Present Job	Rank importance of Work With Other Aspects of Their Lives			
View Their Present Salary	0.08*** (0.02)	0.33*** (0.03)	0.16*** (0.03)	0.12** (0.04)	0.74 (0.11)	0.26	0.001

*Significant at .05 Level
**Significant at .01 Level
***Significant at .001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 level, therefore the restricted model was calculated

TABLE D

DEPENDENT VARIABLE	INDEPENDENT VARIABLES							
	Relationship Between Present Job and Associate Degree Program	View Advancement Possibilities on Present Job	View Present Salary	Rate Present Job Performance	Rank importance of Work With Other Aspects of Their Lives	Intercept	R^2	Sifnificance of F-Ratio[B]
View Activities on Present Job	0.09*** (0.02)[A]	0.25*** (0.03)	0.13*** (0.03)	0.30*** (0.04)	0.34*** (0 04)	0.38 (0.11)	0.38	0.001

*Significant at .05 Level
**Significant at .01 Level
***Significant at .001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 level, therefore the restricted model was calculated

TABLE E

DEPENDENT VARIABLE	INDEPENDENT VARIABLES: View Activities on Present Job	INDEPENDENT VARIABLES: Rank Importance of Work with Other Aspects of Their Lives	Intercept	R^2	Significance of F - Ratio[B]
Rate Present Job Performance	0.17*** (0.02)[A]	0.08** (0.03)	1.08 (0.06)	0.10	0.05

*Significant at .05 Level
**Significant at .01 Level
***Significant at .001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 level, therefore the restricted model was calculated

TABLE F

DEPENDENT VARIABLE	INDEPENDENT VARIABLES							
	Relationship Between Present Job And Associate Degree Program	View Advancement Possibilities on Present Job	View Present Salary	View Activities on Present Job	Rate Present Job Performance	Intercept	R^2	Significance of F-Ratio[B]
Rank Importance of Work With Other Aspects of Their Lives	0.04* (0.02)[A]	0.09*** (0.02)	0.06** (0.02)	0.24*** (0.03)	0.10** (0.03)	1.16	0.24	0.001

*Significant at .05 Level
**Significant at .01 Level
***Significant at .001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 level, therefore the restricted model was calculated.

TABLE G

DEPENDENT VARIABLE	INDEPENDENT VARIABLES: Year Associate Degree Received	Highest Degree Earned to Date	Beginning Salary of First Job	Intercept	R^2	Significance of F - Ratio[B]
Relationship Between Present Job and Associate Degree Program	0.05*** (0.01)[A]	0.64*** (0.09)	-0.001** (0.0003)	-.95 (0.56)	0.06	0.05

*Significant at .05 Level
**Significant at .01 Level
***Significant at .001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 level, therefore the restricted model was calculated.

TABLE H

DEPENDENT VARIABLE	INDEPENDENT VARIABLES: Length of Time Between Graduation and First Job	Length of Time Employed at First Job	Starting Salary on Present Job	Intercept	R^2	Significance of F - Ratio[B]
View Advancement Possibilities on Present Job	0.01* (0.004)[A]	-0.004*** (0.001)	-0.001*** (0.001)	2.94 (0.10)	0.06	0.05

*Significant at .05 Level
**Significant at .01 Level
***Significant at .001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 level, therefore the restricted model was calculated.

TABLE 1

DEPENDENT VARIABLE	INDEPENDENT VARIABLES: Year Associate Degree Received	Highest Degree Earned to Date	Presently Working Toward Another Degree	Number of Employers	Beginning Salary of First Job	Starting Salary on Present Job	Intercept	R^2	Significance of F-Ratio[B]
View Present Salary	0.07 (0.01)[A]	0.27*** (0.08)	0.17* (0.08)	0.07** (0.02)	-0.001*** (0.0003)	-0.0001*** (0.0001)	-2.24 (0.53)	0.12	0.001

*Significant at .05 Level
**Significant at .01 Level
***Significant at .001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 level, therefore the restricted model was calculated

TABLE L

DEPENDENT VARIABLE	INDEPENDENT VARIABLES: Year Associate Degree Received	INDEPENDENT VARIABLES: Beginning Salary for First Job	Intercept	R^2	Significance of F - Ratio[B]
Rank Importance of Work With Other Aspects of Their Lives	0.17*** (0.02)[A]	0.08** (0.03)	1.08 (0.06)	0.10	0.05

*Significant at .05 Level
**Significant at .01 Level
***Significant at .001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 level, therefore the restricted model was calculated.

TABLE J

DEPENDENT VARIABLE	INDEPENDENT VARIABLES: Year Associate Degree Received	Number of Employers	Starting Salary on Present Job	Intercept	R^2	Significance of F - Ratio[B]
View Activities on Present Job	0.04*** (0.007)[A]	0.05* (0.02)	-0.0004** (0.0001)	-0.72 (0.46)	0.05	0.05

*Significant at .05 Level
**Significant at .01 Level
***Significant at .001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 level, therefore the restricted model was calculated.

TABLE K

DEPENDENT VARIABLE	INDEPENDENT VARIABLES: Year Associate Degree Received	INDEPENDENT VARIABLES: Number of Jobs	Intercept	R^2	Significance of F - Ratio[B]
Rate Present Job Performance	0 01* (0 005)[A]	-0 04*** (0 01)	0 04 (0.30)	0.02	0 05

*Significant at 05 Level
**Significant at .01 Level
***Significant at 001 Level

A Standard Error
B The initial F-ratio in the full model was significant at the .05 level, therefore the restricted model was calculated.