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A Comparison of Employer and Student Perceptions of College Graduate Employment

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A COMPARISON OF EMPLOYER AND STUDENT PERCEPTIONS OF COLLEGE GRADUATE EMPLOYMENT

by

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Ray Montagno

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INTRODUCTION

The process of vocational choice has been the subject of interest of many authors. The focus of this interest has been the identity of the important variables that lead to our ultimate career choice. The major product of this concern has been the development of several theories of vocational development. This concern with theory development has enabled the researchers to organize their data into a more useful form. This data can thus be related to the various stages of an individual's development and used to counsel him into an area that seems to best suit his needs and abilities. While more of the well-known theories of vocational development acknowledge a strong need for information on the part of the individual, each theory has its own rationale.

Ginzberg and associates (1951) devised a theory in which vocational choice is considered an irreversible process occurring in reasonably clearly marked periods (the fantasy period, the tentative period, and the realistic period). These periods are characterized by a series of compromises the individual makes between his wishes and his realistic possibilities for a vocation. In general, it is felt that college students enter the last (realistic) stage later than others because job market entry is postponed.

In another theory, Roe (1957) maintains that everyone has an inherited tendency to expend energy in a particular way. This tendency when combined with childhood experiences, such as how needs

are met by the child's parents, will affect the person's career choice patterns in later life. Holland (1959) in his theory indicates that the adequacy of occupational choice is largely a function of the adequacy of self-knowledge and occupational knowledge. The greater the amount of information the person has about each, the higher the probability a satisfactory choice will be made. For a more complete summary of these and other theories of vocational development as well as research related to them see Osipow (1973).

Vroom (1964) distinguishes three aspects of vocational development: 1) a person's preferred occupation, the one which has the strongest personal attraction; 2) a person's chosen occupation, the one with the strongest positive force, i.e., social or monetary attractiveness; and 3) a person's attained occupation, the one in which he becomes a member. It should be pointed out that these three facets of vocational development are, for one reason or another, often different. A person does not always attain the career he prefers or, for that matter, the one he chooses.

If we were to consider college as one link in a person's vocational development, we might look on selection of a field of study as an occupational choice. In fact, research by the National Institute of Education and other private polling agencies has shown that a large majority of the American public feels a major goal of education is to help people get better jobs (Rieder, 1974). College, then, can be and is considered by many people to be a logical step in vocational development.

The success of college as a step in vocational development is questioned by some current research that is in conflict with this concept. A study by the United States Department of Labor Statistics (Perrella, 1973) shows that in many instances a student's college major is unrelated to his first job. Of the 1.2 million college graduates in 1970 and 1971, 50% reported that their first jobs were directly related to their major fields of study. Of the remaining group, 40% said their jobs were somewhat related and 60% said their jobs were totally unrelated. Education and business majors reported most often working in their studied fields, while humanities and social science graduates had the smallest percentage working in areas for which they had prepared.

In a study of educational backgrounds of approximately 500 business managers, Kreider (1971) found that only 28.3% of the respondents had business related academic preparation. Of this group, persons with finance and personnel training accounted for the largest portion.

In addition to the above citations regarding area of employment, Perrella (1973) found that the unemployment rates for college graduates did not significantly differ from the rates for their peers who did not attend college.

In an article dealing with influences on vocational choice, Marr (1969) states that opportunities to learn about different occupations influences occupational choice. Lack of information tends to cause the more obvious and well-known occupations to become overcrowded.

Individuals, then, who have academic preparation specific to one of these better known fields may therefore be forced into a vocation which requires skills for which they are unprepared.

There are, of course, other contributing factors to this problem. An important one at this time is the reduction in intensity of college recruiting by many firms in business and industry. With increased competition among graduates for jobs, only those best prepared will be placed or selected for the jobs they want.

In an article by T. M. Higham (1973) it is pointed out that the employer's task of selecting college graduates has become more difficult. With the reduction in the number of graduates hired, it is important that those hired be more ideally suited to the company's needs. We might infer from this that students should be more aware of an employer's needs to enable them to get the best jobs. A survey of 195 firms by Drake, Kaplan and Stowe (1972) showed that students who chose to enter a field for which their education had given them some preparation had an edge in being selected over their less specialized peers. A further indication that academic career planning is important may be found in a study by Edge and Greenwood (1973). A survey was made of 200 personnel managers which asked them to rank the importance of various skills found in business administration graduates. The results showed that the skills desired were 1) people oriented, 2) business oriented, and 3) quantitatively oriented. It is interesting to note that business skills were of only secondary importance. With this knowledge a business student might opt for more

people oriented courses rather than more courses in economics or accounting. This study also disclosed that more than half of the executives who responded did not feel graduates were adequately prepared to fit this hierarchy of skills.

Several studies have attempted to identify some of the relationships involved in selection of curricula. Slakter and Cramer (1969) found only a weak relationship between propensity to take risks and curricula choice. The implication here is that students are either not aware of, or not concerned with the probability of finding work in a particular field.

In another study, Koch (1972) designed a test to see if choice of undergraduate major is significantly related to the internal rate of return (IRR) on student investment in earning a degree. Internal rate of return (IRR) is based on cross sectional observations of lifetime incomes in various academic areas. Data indicated that those majors with high IRRs were increasing in enrollment and those with low IRRs were decreasing in enrollment. It was felt that significant percentage changes were more important than absolute numbers of students in given majors. Percentage change reflected an immediate response to perceived IRRs rather than the cumulative effect of past influences on student choice. Quality counseling and availability of employment information might have a noticeable effect on altering perceived IRRs.

Given, then, the present employment picture, the student must plan his academic career carefully in order to maximize his chances in the job market. The university has an important responsibility to

counsel students and to make them aware of those programs and approaches that will make them most desirable to prospective employers. University placement centers traditionally have neither the budget nor directive to implement such information campaigns.

Implying that this situation should be improved, Rieder (1974) of the National Institute of Education calls for research in establishing a better understanding of the relationship between education and work. In her opinion, it is the responsibility of the educational institution to provide students with

1. General and specific skills
2. Information, including guidance and counseling about careers and the job market
3. Financial and psychological support
4. Credentials needed for job entry, and for early and continuing education
5. Placement

Rieder points out further that increases in educational attainment do not guarantee greater occupational opportunity. Only when this increased education is combined with appropriate counseling can students be expected to have a realistic view of the job market.

Faia (1971) raises some doubt about the need for a degree in an article which questions whether a student chooses college for the knowledge he will receive or because business and industry have set it up as an untested qualification for entry into their ranks. He goes on to say, however:

> If a student is interested in a certain kind of employment there is no reason why the university and more appropriately the prospective employers should not try to give him a realistic idea as to, first, what skills are most likely to be useful in that kind of employment and, second, how the university or employer might help him obtain such skills (p. 77).

Faia is not defending the degree criterion, but proposes that if it is going to be continued, the university and the employer have the responsibility to insure the student of accurate and timely counseling during his academic career.

Thain (1970) feels current counseling techniques do not serve the needs of students. He notes that although there will always be a need for professions such as education, law, engineering, medicine, and administration, employment counseling for these fields should not be the imposition of external or artificial standards, but a process of self-enlightenment for the student.

There is, however, another viewpoint to be considered. One of the major assumptions of this problem is that students are truly concerned with obtaining work in the traditional sense, and that college is their means to that end. Many authors feel that there is a trend away from this traditional concept. They predict that if business and industry does not adapt to new ideas, many students will reject traditional jobs and seek alternate lifestyles.

Ondrack (1973) surveyed full-time MBA students using the Occupational Values Scale. His conclusion was

> . . . the nature of the emerging shift in occupational values can be described as follows: contemporary students are no longer interested in conventional careers working their ways through the administrative hierarchy of an organization, especially a bureaucratic one (p. 429).

In an analysis of current student rationale, Shaw (1971) cites three factors affecting students today:

1. Relative ease of employment and certainty of income
2. Relatively high level of affluence in the U.S.
3. Engulfment of the individual by behemoth scale organizations

These factors have led to a reevaluation by students of the work ethic and the importance of money. In addition, business and industry, if it wants to continue to tap colleges as a source of talent, will be pressed to justify its products and possibly to reevaluate the profit orientation. Campus recruiting will probably increase as efforts are made to win student interest and approval.

Kerr (1974), in an article comparing the goals of the university with the goals of business, feels that educational institutions have just recently achieved the freedom necessary to be an accurate evaluator of society. Colleges should not be merely training facilities for new businessmen, but sources of criticism for society. In his opinion, business should not only accept but support this role of education.

The point of the last few articles cited seems to be that, regardless of the employment situation at the current time, students should be and are using college to develop according to their own personal designs and are ignoring the demands of business for conformity. This concept appears to be in conflict with the earlier references which ask for more cooperation between employers and universities in turning out students who will fit the business mold.

The purpose of this study is to gather information which might be used to help reduce this conflict. The goal is to determine employers' perceptions of desirable student academic preparation and, in addition, to gather data on students' perceptions of what employers feel is desirable. Statistical comparisons can then be made to deter-

mine in which areas the two groups differ or agree in opinion. The primary expectation is that students will not have the same opinions as employers on the subjects of recruiting practices, academic preparation, and skills considered necessary for employment. The implication of this assertion, if valid, is that students are currently basing their curricular choices on either inaccurate information, little or no information, or they choose to follow their own interests.

Another interpretation is also possible. Some authors feel that college is a period of individual growth and should not be a time of stereotype fitting. If students do not agree with or hold no opinions about employer practices, this may be regarded as reflecting their individuality and lack of concern with the practicalities of finding employment. While it is not the intent of this study to choose between these alternatives, it is felt that several interpretations are possible and should be considered when evaluating the results of this study.

The subject, then, of this study are those factors in vocational selection which the university and the student can control by better planning. These factors include such areas as the major field of study employers prefer for applicants, which skills they prefer, and students' awareness of these preferences. It is not the intent to look at student personality characteristics, but rather the usable skills a student might acquire while in college. The study will also be limited to the problems related to placement and selection in business and industry.

METHOD

Student Survey

Sample

Students for this study were selected from the junior and senior classes registered for the Winter 1974 semester at a midwestern university. Juniors and seniors were selected since they probably have at least given a minimum amount of thought to employment after graduation. Only full-time students were used because of the possibility that part-time students were already employed full time and therefore would not be actively seeking employment when they received their degrees. In order to have an adequate number of subjects for analysis subgroups, a return of approximately 200 was regarded as necessary. Subgroups were formed on the basis of class in school, sex, and field of study. A return of 200 would assure approximately 50 subjects from each of the 4 academic colleges, namely, arts and sciences, applied sciences, business, and education. (Since the College of Fine Arts is small, it was combined with the College of Arts and Sciences.) The university's administrative computer was used to generate the student sample. A list of 364 names was compiled by selecting every twentieth full-time junior and senior. To achieve the required 200 respondents would therefore require a response rate of 55%. This response rate seemed attainable and the sample was accepted.

Instrument

With the aid of the Career Planning and Placement Office and several faculty members, the student employment questionnaire (Appendix A) was developed. The instrument was divided into five sections. Section I dealt with student demographic information and data relating to student use of the counseling services. The second section covered student impressions of employer recruiting practices. Students were asked to respond to a series of statements by checking strongly agree, agree, disagree, strongly disagree, or no opinion. Section III was similar in construction to Section II. Its purpose was to gather information on student opinions about education and future employment. Section IV was a series of rank order questions dealing with student perceptions of the availability of jobs and of those skills they believed were desired by employers. The purpose of the final section (Section V) was to determine how students felt their university compared with other large state universities in preparing students for employment.

Section I contained information which would allow for the subgrouping of students for analysis, and Sections I and V contained information of interest to the Career Planning and Placement Office. Comparative analyses between students and employers were to be run on data from Sections II, III, and IV.

The questionnaire itself was a folded, two-page form. It was preaddressed, prestamped and contained return mailing instructions.

Procedure

The questionnaires were mailed to students approximately five weeks before the end of the Winter 1974 semester. A cover letter (Appendix B) explaining the study was included with the questionnaire. One and a half weeks later, a reminder card (Appendix C) was sent to those who had not yet responded. Since it was close to the end of the semester and few responses could be expected after students left campus, a second questionnaire was sent two weeks after the reminder card. Included with this second questionnaire was a follow-up letter. The returned questionnaires were coded and the data entered into punched cards for computer processing.

Employer Survey

Sample

Files of the Career Planning and Placement Office were used to develop a sample of employers for this study. With the guidance of the placement office, a final list of 100 employers was compiled. Relative to the number of recruiters, the list represented a nearly proportionate number of employers from the areas of accounting, banking, service industries, retail department stores, government, food chains, public utilities, transportation, and manufacturing and process industries. Manufacturing and process companies represented the bulk of the sample with over 50 employers falling into that category. It was believed that the employers chosen represented stable companies which had been reasonably consistent in their recruiting practices over the past several years.

The employers were divided into two subgroups: one made up of manufacturing and process companies while the second was comprised of all other companies. Henceforth, the first group will be referred to as manufacturers and the second referred to as nonmanufacturers.

There are several reasons for combining all others into the second subgroup. The sample size for individual areas (e.g., accounting) would be so small that reliable statistical conclusions could not be drawn. In addition, most of these industries have a higher ratio of staff to line personnel than do most product-oriented industries.

A sample size of 100 was selected to ensure adequate size for the subgroups. A similar study by Edge and Greenwood (1973) had cited a return of 66%, and another study by Dennis and Gustafson (1973) had a return of 72%. Since the subjects of these two studies were similar to those of the present study, a similar response rate was anticipated.

Instrument

Due to the comparative nature of this study, the employer questionnaire had to be similar in content to the student questionnaire. Therefore, it also consisted of five sections. The first section was intended to gather information for classification purposes. Section II consisted of a series of questions on recruiting practices to which the respondent could answer strongly agree, agree, disagree, strongly disagree, or no opinion. Section III was similarly constructed to

Section II but dealt with employers' impressions of student rationale of education and employment. The next section included rank-order questions on job availability and on skills desired by employers. The fifth section was an attempt to gather some information comparing this institution's graduates to graduates from other large state universities.

Sections II, III, and IV were those intended to be used for comparison purposes. Section V contained information of general interest to the Career Planning and Placement Office.

The questionnaire itself was of the same format as the student questionnaire; that is, a folded, preaddressed, prestamped form with mailing instructions.

Procedure

Questionnaires were mailed with a cover letter (Appendix F) to campus recruiters at the sample companies. Approximately two weeks later, a reminder card (Appendix G) was sent to those who had not yet responded. At this time it became apparent that the questionnaires were generally not being filled out by the persons to whom they had been addressed. In order to cover the possibility that the original questionnaire had been lost due to personnel changes, a second and final questionnaire was sent with a new cover letter (Appendix H). This final mailing took place approximately one month after the original questionnaire had been sent. As with the student returns, the questionnaires were coded and data entered on files in the computer.

RESULTS

General

In order to facilitate interpretation of the results of this study, data for students and employers are reported separately with a third section containing comparisons. Comparisons were made not only between students and employers, but also between student subgroups as well as between the two employer subgroups. These subgroup comparisons were used to assure the need for maintaining the chosen subgroups. The chi-square (X^2) statistic was used for comparisons involved in frequency data and the Spearman rank-order correlation used for ranked data.

The response rates for both portions of this survey were relatively good (Table 1). For students, 245 usable questionnaires out of 364 were returned for an overall rate of 67.3%. Senior males had the highest individual rate with 75.7% returned, and junior males had the lowest rate with 61.1% returned. Approximately 20 additional student questionnaires were received, but were considered unusable either because most questions were unanswered or because they were received after data analysis had been completed.

The employer return rate was similar to that of the student survey (Table 1). Of the 100 questionnaires mailed 66 were returned for a percentage returned rate of 66.7%. Manufacturers and process companies, henceforth to be referred to as manufacturers, had a return rate of 53.5% while nonmanufacturers had a rate of 81.8%.

Table 1

Response Rates for Students and Employers

	Questionnaires Mailed	Usable Questionnaires Returned	%
Student Sample			
Junior Males	90	55	61.1
Junior Females	93	63	67.7
Senior Males	111	84	75.7
Senior Females	70	43	61.4
Totals	364	245	67.3
Employer Sample			
Manufacturers	56	30	53.5
Nonmanufacturers	44	36	81.8
Totals	100	66	66.7

Two letters were received from employers indicating that they did not wish to participate in the study, and three more questionnaires were received after data analysis had progressed past the point where they could be included.

Student Survey Results

Section I

Questions one through seven of the student questionnaire concern descriptive data for students. Table 2 provides the distribution of the sample by sex, class, year in school, and academic college. It can be observed from the above data that students in this sample were reasonably representative of upper division students of the university population.

Table 3 shows a breakdown of student postgraduate employment intentions. In general, student responses to this question indicated that most students intend to work in fields associated with their academic major. The field of education contained the highest percentage of students who chose the same response for future employment; 90.2% reported intending to teach when they completed their degrees. A majority of business and applied sciences students, 80.7% and 58.0% respectively, reported that they intended to work in business and industry after graduation. Arts and sciences students were more diverse in their future plans with the largest portion, 36.4% indicating an intention to attend graduate school. Many fields today such as psychology or sociology require that students continue their education, but

Table 2

Student Demographic Information Based on Responses in Section I

	Sample		Population	
	N	%	N	%
Sex				
Male	139	56.7	4,850	57.3
Female	106	43.3	3,614	42.7
Curriculum by College				
Arts & Sciences	77	31.4	3,174	37.5
Applied Sciences	50	20.4	1,518	17.9
Business	57	23.3	1,354	16.0
Education	61	24.9	2,418	28.6
Year in School				
Junior	118	48.2	3,658	43.2
Senior	127	51.8	4,806	56.8

Table 3

Employment Intentions and Current Employment Status by College
Based on Responses in Section I

	Arts & Sciences		Applied Sciences		Business		Education	
	N	%	N	%	N	%	N	%
Postgraduate Work Intention Field								
Business & industry	14	18.2	29	58.0	46	80.7	1	1.6
Government	8	10.4	2	4.0	-	-	2	3.3
Teaching	12	15.6	6	12.0	-	-	55	90.2
Graduate school	28	36.4	5	10.0	6	10.5	3	4.9
Other	15	19.5	8	16.0	5	8.8	-	-
Employment Status								
Don't work	48	62.3	27	54.0	21	36.8	36	59.0
Part-time job	29	37.7	23	46.0	31	54.4	24	39.3
Full-time job	-	-	-	-	5	8.8	1	1.6
Continue with Current Employer								
Yes	8	27.6	3	13.0	11	30.6	4	16.0
No	21	72.4	20	87.0	25	69.4	21	84.0
Accepted Position for After Graduation								
Yes	4	5.2	1	2.0	8	14.0	1	1.6
No	73	94.8	49	98.0	49	86.0	60	98.4

this figure could be inflated by students who feel either unprepared for work or undecided about possible alternatives. Overall, 11% of the total student respondents indicated graduate school as their primary postgraduate choice.

Table 3 shows the current work status of students in the sample. More business students were employed than any other group, 63.2%. The College of Arts and Sciences had the smallest percentage employed (37.7%). Business students also reported the highest percentage of those who will probably continue with the same employer after graduation (30.6%). The greatest percentage of students having already accepted positions for after graduation (14.0%) also came from the College of Business.

The remainder of the data in Section I covers student use and appraisal of the various counseling services available on campus. This information is represented in Table 4. The total number of contacts made with the various services exceeded the total number of survey respondents since many students gave multiple responses to this question. For all colleges except business, individual departments or faculty members were the most frequently used forms of counseling. For business students, the campus Counseling Center was most popular. Testing Services and the Placement Center, respectively, were the least used services according to this sample. A total of 58 or 23.7% of this survey group reported never seeking academic counseling. In general, students who used these services considered the counseling helpful and the persons to whom they spoke knowledgeable. Data here,

Table 4

Frequency of Use and Satisfaction with Vocational Counseling Services Reported by Students in Section I (N=245)

		Services													
		Testing Services		Placement Center		Counseling Center		College		Department		Didn't Know Where to Go		Never Sought Help	
	N	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Usage by College															
Arts & Sciences	77	5	7	7	9	33	43	12	15	57	74	8	10	23	30
Applied Sciences	50	6	12	2	4	15	30	10	20	22	44	1	2	7	14
Business	57	3	5	11	19	33	58	10	18	28	49	1	2	10	18
Education	61	2	3	7	12	14	23	4	7	31	51	3	5	18	30
Total*	245	16	6	27	11	95	39	36	15	138	56	13	5	58	24
Value of Counseling															
Very helpful		2		7		26		7		54					
Fairly helpful		7	}56	11	}67	28	}56	12	}68	48	}74				
Slightly helpful		7		7		27		7		21					
Not at all helpful		0	}44	1	}33	8	}44	2	}32	5	}26				
Knowledgeability of Counselor															
Very well informed		3	43	8	50	12	12	12	40	58	45				
Sufficiently informed		5	36	13	55	56	63	14	47	54	42				
Not at all informed		6	21	4	15	24	25	4	13	16	12				

*Total usage frequency exceeds N since many students gave multiple responses to this question.

however, are inconclusive since students did not always complete the full sequence of questions. Question 11, which asked students to rank which of the listed counseling services should have the responsibility for gathering and disseminating new job information, showed

Rank Order	Agency
1st -	Placement Center
2nd -	Individual departments (or faculty members)
3rd -	Counseling Center
4th -	College in which student is enrolled
5th -	Testing Services

A disparity that appeared in these data was that while the Career Planning and Placement Center was ranked first for this role it was next to last in usage. Students apparently felt this function belonged to the Placement Center, but for some reason did not use its services.

Section II

This section of the questionnaire was intended to get student opinion about employer recruiting practices. There were 12 different student subgroups considered in analyzing this data.

Subgroup	N
Juniors	127
Seniors	118
Males	139
Females	106
Junior Males	55
Junior Females	63
Senior Males	84
Senior Females	43
Arts and Sciences	77
Applied Sciences	50
Business	57
Education	61

On the questionnaire, student responses were recorded in terms of a five point scale: agree, strongly agree, disagree, strongly disagree,

and no opinion. It was decided, however, to combine the agree and strongly agree responses, as well as the disagree and strongly disagree responses, into two response categories for analysis purposes. It was necessary to collapse these responses because of the low observed frequencies in the X^2 contingency tables which fell below five in many instances (Downie & Heath, 1965).

Appendix I contains the frequency of response for the 12 student subgroups previously mentioned.

Table 5 shows the X^2s comparing frequency of response among student subgroups based on class and sex in Section II. Of the possible 84 comparisons (21 statements by 4 pairings of subgroups), 8 were significantly different at the .05 level (9.5%) and 4 at the .01 level (4.8%). Table 6 shows the X^2 comparisons on Section II for subgroupings based on academic college. Here we find that out of a possible 126 comparisons (21 statements by 6 pairings), 14 were significant at the .05 level (11.1%) and 7 at the .01 level (5.6%). The total number of significant differences (33 out of 210 for 15.7%) indicated that there was enough difference among these groups on Section II to consider them separately in future comparisons.

In summarizing Tables 5 and 6, the following differences are noted:

Comparison	Number of Questions Significantly Different
Male-Female	5
Junior-Senior	2
Jr. Male-Jr. Female	1
Sr. Male-Sr. Female	4
Arts & Sciences-Appld Sci	0
Arts & Sciences-Business	4
Arts & Sciences-Education	2
Appld Sci-Education	6
Appld Sci-Business	1
Business-Education	8

Table 5

Chi-squares Comparing Student Subgroups Based on Class and Sex on Section II - Employer Recruiting Practices

Question Synopsis	Subgroups			
	Male vs Female	Junior vs Senior	Jr Male vs Jr Female	Sr Male vs Sr Female
1. Interview preference by major	6.36*	.60	3.57	3.75
2. Importance of communications	4.25	2.39	3.16	2.22
3. Commitment of business & applied sciences students	4.35	6.01*	2.90	4.57
4. Commitment of arts & sciences students	.95	8.28*	1.71	1.61
5. Company size related to academic preference	6.62*	2.53	4.78	1.65
6. Company finances related to number of grads hired	5.61	1.11	1.77	8.65*
7. Minority preference	1.68	.79	.46	5.38
8. Background of top management	9.83**	1.12	2.58	8.57*
9. Job assignment and academic major	5.86	1.18	7.15*	3.27
10. Employer training policies	3.03	2.80	3.42	1.24
11. Preference for specialized vs liberal degrees	4.39	2.51	.26	7.56*
12. Opportunity for continued education	3.46	.89	.93	3.71

*p <.05
**p <.01

(continued)

Table 5 (continued)

Chi-squares Comparing Student Subgroups Based on Class and Sex on Section II - Employer Recruiting Practices

Question Synopsis	Subgroups			
	Male vs Female	Junior vs Senior	Jr Male vs Jr Female	Sr Male vs Sr Female
13. Salary differential for liberal degree	3.63	.50	.003	5.86
14. Effect of grades on job	.13	2.56	.48	1.72
15. Preference for women grads	13.58**	1.17	2.51	14.26**
16. Oversupply of business grads	2.64	1.64	2.73	1.67
17. Oversupply of tech grads	.56	4.60	1.92	.40
18. Oversupply of education grads	9.98**	2.50	1.62	8.02
19. Oversupply of science grads	.37	6.50	.58	4.89
20. Oversupply of social science grads	.10	5.89	.18	1.07
21. Oversupply of fine arts grads	3.72	3.28	.12	4.94

*p < .05
**p < .01

Table 6

Chi-squares Comparing Student Subgroups Based on Academic Colleges on Section II - Employer Recruiting Practices

Question Synopsis	Subgroups					
	A & S vs Appld Sci	A & S vs Business	Appld Sci vs Education	Appld Sci vs Business	A & S vs Education	Business vs Education
1. Interview preference by major	.513	2.11	6.17*	.49	6.00*	10.14**
2. Importance of communications	5.88	5.51	2.29	3.14	1.66	4.45
3. Commitment of business and applied sci students	1.24	.32	9.65**	1.20	5.59	5.18
4. Commitment of arts and sciences students	.74	.71	1.42	2.41	.650	1.09
5. Company size related to academic preference	4.00	1.77	5.26	.533	.209	2.73
6. Company finances related to number of grads hired	.175	.589	2.13	.181	1.95	3.77
7. Minority preference	4.78	.290	11.42**	2.85	5.03	6.30*
8. Background of top management	3.59	6.91*	6.85*	1.95	.937	11.08**
9. Job assignment and academic major	1.34	5.31	8.73*	1.36	6.49*	11.85**

*p < .05
**p < .01

(continued)

Table 6 (continued)

Chi-squares Comparing Student Subgroups Based on Academic Colleges on Section II - Employer Recruiting Practices

Question Synopsis	Subgroups					
	A & S vs Appld Sci	A & S vs Business	Appld Sci vs Education	Appld Sci vs Business	A & S vs Education	Business vs Education
10. Employer training policies	.276	4.93	1.93	2.81	1.07	9.18*
11. Preference for specialized vs liberal degrees	2.36	6.06*	7.51*	2.24	3.44	7.01*
12. Opportunity for continued education	2.51	6.47*	3.07	.727	.182	7.15*
13. Salary differential for liberal degree	5.59	2.14	3.41	.817	1.72	1.88
14. Effect of grades on job	5.18	1.46	2.36	1.60	.863	1.05
15. Preference for women grads	.603	5.00	2.22	5.16	.808	2.46
16. Oversupply of business grads	2.81	15.02**	4.58	14.86**	1.47	8.71*
17. Oversupply of tech grads	.622	1.77	.56	1.27	.567	.33
18. Oversupply of education grads	.009	1.78	1.97	1.34	1.62	2.81

*p < .05
**p < .01

(continued)

Table 6 (continued)

Chi-squares Comparing Student Subgroups Based on Academic Colleges on Section II - Employer Recruiting Practices

Question Synopsis	Subgroups					
	A & S vs Appld Sci	A & S vs Business	Appld Sci vs Education	Appld Sci vs Business	A & S vs Education	Business vs Education
19. Oversupply of science grads	.20	.12	1.80	.38	1.16	.57
20. Oversupply of social science grads	2.33	.193	1.84	2.88	3.18	2.49
21. Oversupply of fine arts grads	1.84	.904	4.38	4.48	1.14	.471

*p < .05
**p < .01

The Business-Education comparisons showed the most differences (8 out of 21), while the Arts & Sciences-Applied Sciences comparison showed no statistically significant differences on Section II.

The following questions showed significant subgroup differences most often in Section II.

Question Number	Subject of Question
1	Employers' preferences for majors for campus interview
8	Employers seek backgrounds similar to top management
9	Effect of major on eventual placement
11	Preference of employers for liberal versus specialized degrees

These questions all dealt with student perceptions of employer preferences for particular majors, indicating that some differences exist between student perceptions and desires of employers.

Section III

This section deals with student rationale concerning education and future employment. Tables 7 and 8 show the two comparisons for the student subgroups based respectively on class and sex, and academic college. From Table 7 it is observed that of a possible 64 comparisons (16 statements by 4 pairings by class and sex), 6 are significantly different at the .05 level (9.3%), and 4 comparisons are significant at the .01 level (6.3%). Similarly, from Table 8, of the 96 possible comparisons (16 statements by 6 pairings by academic college), 12 are significantly different at the .05 level (11.5%), and 14 are significant at the .01 level (14.6%). These results contribute additional support to the existence of differences between subgroupings.

Table 7

Chi-squares Comparing Student Subgroups Based on Class and Sex on Section III - Student Rationale of Education and Employment

Question Synopsis	Subgroups			
	Male vs Female	Junior vs Senior	Jr Male vs Jr Female	Sr Male vs Sr Female
1. Value of college and employment	.004	.57	1.44	.84
2. Value of major and employment	6.37*	.41	4.38	3.97
3. Responsibility of university to job market	1.41	1.18	.92	.44
4. Grad is limited only by abilities	1.49	2.41	.43	1.51
5. Immediate use of skills	2.88	1.56	1.89	5.41
6. Ability more important than knowledge	2.54	4.19	.25	2.17
7. A & S students unrealistic about job market	13.02**	1.65	3.30	9.65**
8. Use of skills by tech grads	2.97	2.77	3.48	1.22
9. Importance of summer jobs	1.53	6.78*	3.31	1.28
10. Value of a business "minor"	14.69**	.66	7.35*	8.48*
11. Long-range value of college	2.64	8.91*	.36	1.82
12. Use of Placement Center by friends	4.06	16.98**	4.98	3.47

*p<.05
**p<.01

(continued)

Table 7 (continued)

Chi-squares Comparing Student Subgroups Based on Class and Sex on Section III - Student Rationale of Education and Employment

Question Synopsis	Subgroups			
	Male vs Female	Junior vs Senior	Jr Male vs Jr Female	Sr Male vs Sr Female
13. Personal use of Placement Center	4.25	1.01	1.76	6.59*
14. Personal idea of ideal job	1.23	1.73	.004	2.54
15. Change major if job opportunities changed	.84	.30	1.16	.78
16. Expect to settle for less than ideal job	5.68	4.11	5.15	3.51

*$p < .05$

Table 8

Chi-squares Comparing Student Subgroups Based on Academic Colleges on Section III - Student Rationale of Education and Employment

Question Synopsis	Subgroups					
	A & S vs Appld Sci	A & S vs Business	Appld Sci vs Education	Appld Sci vs Business	A & S vs Education	Business vs Education
1. Value of college and employment	.68	.750	.931	.005	.006	.955
2. Value of major and employment	3.68	9.90*	8.55*	2.98	1.76	16.51**
3. Responsibility of university to job market	7.11*	12.04*	.824	.735	10.19**	.286
4. Grad is limited only by abilities	.838	1.10	2.86	.009	1.14	3.45
5. Immediate use of skills	8.01*	9.45**	6.37*	22.48**	6.68*	25.61**
6. Ability more important than knowledge	2.87	2.73	2.28	1.50	4.25	.18
7. A & S students unrealistic about job market	6.86*	15.92**	5.65	2.44	4.80	7.66*
8. Use of skills by tech grads	5.14	1.95	11.53**	2.26	5.82	4.18
9. Importance of summer jobs	1.88	.006	5.70	1.18	5.59	5.46

*p < .05
**p < .01

(continued)

Table 8 (continued)

Chi-squares Comparing Student Subgroups Based on Academic Colleges on Section III - Student Rationale of Education and Employment

Question Synopsis	Subgroups					
	A & S vs Appld Sci	A & S vs Business	Appld Sci vs Education	Appld Sci vs Business	A & S vs Education	Business vs Education
10. Value of a business "minor"	2.79	21.73**	.665	15.19**	3.53	22.90**
11. Long-range value of college	.414	4.19	3.25	1.58	2.78	9.08*
12. Use of Placement Center by friends	10.94**	6.80*	1.22	.633	15.17**	1.95
13. Personal use of Placement Center	4.89	5.12	3.86	2.73	14.17**	12.68**
14. Personal idea of ideal job	.866	5.27	1.57	4.76	.647	7.99*
15. Change major if job opportunities changed	3.27	2.95	5.47	1.75	2.68	2.23
16. Expect to settle for less than ideal job	2.00	1.60	1.33	3.04	3.24	1.45

*$p < .05$
**$p < .01$

The differences in this portion of the questionnaire on student rationale of employment and education were distributed among the pairs in the following way (from Tables 7 and 8):

Comparison	Number of Questions Significantly Different
Male–Female	3
Junior–Senior	3
Jr. Male–Jr. Female	1
Sr. Male–Sr. Female	3
Arts & Sciences–Appld Sci	4
Arts & Sciences–Business	6
Arts & Sciences–Education	4
Appld Sci–Education	3
Appld Sci–Business	2
Business–Education	7

The Junior Male–Junior Female comparison had the fewest number of differences in this section, only 1 of the 16 questions was responded to differently. As with Section II on employer recruiting practices, the Business–Education comparison showed the greatest number of significant differences.

The questions eliciting significantly different responses most often were

Question Number	Subject of Question
2	Choice of major related to future employment
5	Immediate use of skills
7	A & S students' realism about job market
10	Value of business minor
12	Use of Placement Center by friends

The nature of these questions suggest that student subgroups differ in their perceptions of how their college skills will relate to future jobs (questions 2, 5, and 10) and how to go about approaching the job market (questions 7 and 12).

Section IV

Contained in this section was a series of rank-order questions relating to 1) the availability of jobs in specific employment areas, 2) the specificity of training necessary, 3) work area preference, and 4) the importance of particular skills to employers. In the case of questions 1, 2, and 3, the student was to rank 11 different employment areas according to his opinion. On question 4 he was to rank 5 different skills as to how important he thought they were to employers. Appendix K contains the actual rank-orderings by the student subgroups to these questions.

Spearman rank-order correlations (Downie & Heath, 1965) were computed to test the agreement between student subgroup rankings of the items in these questions. The pairings for the comparisons were on the basis of sex, year in school, and academic college. Table 9 displays these correlations. For each question there are 10 subgroup pairings. The following number of significant ($p < .05$) correlations between student subgroups for each question were found.

Question	Number of Significant Correlations (out of 10)
1. Where are most jobs available?	3
2. Where is specific training most necessary?	10
3. Where would you like to work?	2
4. Importance of particular skills to employers.	1

Students exhibited a surprising degree of agreement on question 2 indicating that they were aware of those fields requiring specific training; yet they did not seem to agree on what those skills were (question 4) or where most jobs were available assuming the skill requirement was met.

Table 9

Spearman Rank-Order Correlation Coefficients
Between Student Subgroups for Questions in Section IV

Comparison	Question[1] (1) Where are most jobs available	(2) Where is specific training most necessary	(3) Where would you like to work	(4) Importance of skill areas
Junior-Senior	.364	.927*	.637*	.700
Male-Female	.509	.927*	.114	.350
Jr Male-Jr Female	.773*	.887*	.311	.675
Sr Male-Sr Female	.245	.857*	.080	.000
A & S-Applied Sci	.670*	.870*	-.093	.600
A & S-Business	.209	.882*	.030	.900*
A & S-Education	.557	.870*	.709*	.600
Applied Sci-Bus	.139	.816*	.282	.700
Applied Sci-Educ	.732*	.811*	.020	.200
Business-Educ	.070	.861*	-.284	.300

*$p < .05$

[1]Questions 1, 2, and 3 had 11 work areas to rank while question 4 had 5 particular skills to rank.

Section V

This section was intended to get an idea of how students felt their university compared to other large state universities both from an employment standpoint and academically. Unfortunately on the employment comparison portions (questions 1, 2, and 3), more than half of those students responding claimed to lack sufficient knowledge to answer the question or simply left them blank. In addition, many of those who did respond merely chose the middle response, that this university's students performed the same as graduates from other schools. While no specific data will be reported on these questions, it might be inferred that students are not apprised of this school's "quality" in these respects.

Question 4 of this section had a higher degree of response than the others and was retained. This question pertained to this university's academic standards in relation to "Big Ten" universities. The results were as follows:

Response	N	%
Much higher	1	.4
Higher	17	6.9
The same	115	46.9
Lower	76	31.0
Much lower	7	2.9

While approximately half of the respondents considered this state university the same as "Big Ten" schools, a large portion chose the "Lower" response. This, too, could be a reflection of this institution's failure to sell its quality to its students. This possibly has resulted in an assumed inferiority.

Employer Questionnaire

Section I

The first section of the employer questionnaire gathered information pertaining to the employer's primary organizational function (accounting, manufacturing, etc.), size, and recent campus recruiting. This information is displayed in Table 10. Manufacturing and process companies made up the largest group of respondents with 30 out of 66 being in that group. The smallest group of respondents was government agencies with three. Thirty-two employers had fewer than 5000 employees, 20 had between 5000 and 30,000, and 14 had over 30,000 employees. Thirty-two organizations hired between 0 and 25 graduates last year, 19 hired between 26 and 100, and 15 hired over 100 graduates last year. Forty-two of the employers visited between 0 and 25 campuses last year, 14 visited between 26 and 100, and 10 employers visited over 100 campuses. This data indicates a broad distribution of employers on the basis of organizational orientation (e.g., product or service), size, number of graduates hired, and number of campuses visited.

Sections II and III

These two sections surveyed data respectively on employer recruiting practices and employer opinions of student rationale of education and employment. Appendix L contains the frequency of response for the manufacturer and nonmanufacturer subgroups for these two sections.

A few of the items which are in Section II elicited response frequencies that indicated high levels of employer agreement. For

Table 10

Background Information on Employers
Based on Responses to Section I of Employer Survey

1. Classification of Organizations Responding	
Service, railroads, utilities	14
Accounting firms	7
Insurance companies	4
Chain stores	4
Banks	4
Government	3
Manufacturers or process	30
2. Size of Organization	
Under 5,000 employees	32
5,000–30,000 employees	20
Over 30,000 employees	14
3. Number of Graduates Hired	
0–25	32
26–100	19
Over 100	15
4. Number of Campuses Visited	
0–25	42
26–100	14
Over 100	10

example, 98% of all employers agreed with the statement that communications are an important skill. A large percentage on the other hand disagreed with the statement that minorities and women are given a preference in recruiting (questions 7 and 15).

Most employers also disagreed with the expression that the liberally educated person would be of more value to their companies in the long-run than graduates with specialized degrees (question 11). A large percentage of the employer respondents felt their organizations offered adequate opportunity for graduates to continue their education in special skill areas (question 12). Surprisingly, considering the economic condition of the time, over 77% felt the number of college graduates hired in the future would not decline (question 16). Table 11 shows the X^2 analysis for the two employer subgroups on Section II covering recruiting practices.

Four questions showed significantly different ($p < .05$) response frequencies:

Question Number	Subject of Question
13	Lower starting salaries for liberal graduates
16	Future number of graduates hired will decline
22	Oversupply of technical graduates
24	Oversupply of science graduates

Questions 13 and 24 represented significant differences due to actual opposite opinions between employer subgroups; a majority of manufacturers agreeing that liberal arts graduates do get lower salaries and disagreeing that there is an oversupply of technical graduates. The other two questions were statistically significant but represented differences in degree not direction.

Table 11

Chi-squares Between Manufacturers and Nonmanufacturers Responses to Section II - Employer Recruiting Practices

Question Synopsis	X^2	Question Synopsis	X^2
1. Interview preference by major	.98	14. Effect of grades on job	.55
2. Importance of communications	.002	15. Preference for women grads	1.30
3. Commitment of business & applied sci students	3.43	16. Future number of grads hired will decline	8.11*
4. Commitment of A & S students	2.42	17. Enrollment decline related to reduced demand by business and industry	1.92
5. Company size related to academic preference	2.34	18. Degree as accomplishment vs knowledge	3.57
6. Company finances related to number of grads hired	.67	19. Insensitivity of university system to industry	3.77
7. Minority preference	1.32	20. Expect grads to continue education after hire	.72
8. Background of top management	.79	21. Oversupply of business grads	3.17
9. Job assignment and academic major	3.59	22. Oversupply of tech grads	7.26*
10. Employer training policies	.49	23. Oversupply of education grads	.14
11. Preference for specialized vs liberal degrees	1.44	24. Oversupply of science grads	12.65**
12. Opportunity for continued education	1.38	25. Oversupply of social science grads	1.72
13. Salary differential for liberal degree	6.95*	26. Oversupply of fine arts grads	2.43

*$p < .05$
**$p < .01$

In Section III employers showed a high level of agreement on several of the statements. Over 80% agreed that they thought students considered college important for getting a job (question 1). Nearly 57% also felt that arts and sciences students have a less realistic view of desired skills than do business and applied sciences students. An overwhelming percentage of the employers (98%) felt a business "minor" would be a good idea for arts and sciences students (question 10).

In Section III (see Table 12), only item 8, dealing with the fullest use of skills by newly hired engineering and technology graduates, was responded to significantly different. Here again, the difference arose from a difference of degree not direction.

Of a total 41 possible X^2 comparisons for both Sections II and III, 2 were significant at the .01 level (4.9%) and 3 were significant at the .05 level (7.3%).

Section IV

This section of the employer questionnaire contained four rank-order questions. They dealt with 1) potential employment areas for students, 2) what work areas require the most specific training, 3) skills considered necessary by employers, and 4) preference for a campus agency to handle job information. The actual rank-orderings by manufacturers and nonmanufacturers can be found in Appendix N. Table 13 shows the correlation between the employer subgroups on these rank-order questions.

Table 12

Chi-squares Between Manufacturers and Nonmanufacturers Responses on Section III - Student Rationale of Education and Employment

Question Synopsis	X^2	Question Synopsis	X^2
1. Value of college and employment	3.50	12. Use of Placement Center by company	.55
2. Value of major and employment	.18	13. Students know type of job they want	1.41
3. Responsibility of university to job market	2.64	14. Students would change major if job opportunities changed	.15
4. Grad is limited only by abilities	2.04	15. Students expect to settle for less than ideal job	2.87
5. Immediate use of skills	2.10		
6. Ability more important than knowledge	2.04		
7. A & S students unrealistic about job market	.16		
8. Use of skills by tech grads	13.65**		
9. Importance of summer jobs	5.00		
10. Value of a business "minor"	3.74		
11. Long-range value of college	4.42		

*$p < .05$
**$p < .01$

Table 13

Spearman Rank-Order Correlation Coefficients
Between Manufacturers and Nonmanufacturers Responses
to Section IV Containing Four Rank-Order Questions

Question[1]	Spearman Correlation
1. Where most jobs are available.	.907*
2. Where specific training is most necessary.	.848*
3. Importance of skill areas.	.800
4. Responsibility for campus job information.	1.00*

*$p < .05$

[1]Questions 1 and 2 had 11 items; question 3 had 5, and question 4 had 6 items.

In question 1 which showed a significant correlation, manufacturing companies, accounting firms, engineering firms, and government agencies were cited as having the highest potential for employment. Accounting and engineering firms were selected as the employment areas requiring the most specific training.

Question 3 dealing with desired skills failed to show significant correlation between the subgroups. While the trend of the rankings was similar in this question (resulting in the high but nonsignificant correlation of .80), the choices for the most important skill were reversed. Manufacturers chose technical skills while the nonmanufacturers chose leadership skills as first. This result might be expected in view of the differences in the nature of the functions of the two subgroups, that is, a production orientation with the manufacturing group and a service orientation with the other.

Question 4 in this section shows that the Placement Center is the preferred agent of employers at the university for gathering and disseminating new job information.

In general, the employer subgroups exhibited more agreement between themselves than did the students. There were enough differences, however, to argue against combining the two subgroups for statistical comparisons with students.

Section V

Fifty out of 66 employers reported a history of previously employing and recruiting this university's graduates. Table 14

Table 14

Number of Students Hired and Their Performance Relative
to Students from Other Large State Universities
Section V of Employer Questionnaire

	Business	Applied Sciences	Liberal Arts	Physical Sciences	Education	Social Science	Total
Number of graduates hired from Western	45	26	14	7	5	10	107
Graduates do better	4	2		2	1		9
Graduates do as well	38	21	12	3	3	9	86
Graduates don't do as well		2	1	1			4

contains the data reported in this section comparing this university's graduates with those of other large state universities. Exact percentages cannot be determined in some cases because all questions were not answered by all respondents completely. One hundred and seven graduates were reported by their employers as doing as well as others in their jobs, nine as having done better, and only four graduates were reported as not having done as well. Seventy-five percent of those employers responding thought the school's academic standards were the same as "Big Ten" universities. Of the 55 employers responding to the question on the quality of the Career Planning and Placement Center, 20% thought it was excellent and 55.5% said it was adequate.

Employer-Student Comparison

Statistical analysis of the comparison of the responses of employers and students was based on the data contained in Sections II, III, and IV of both questionnaires. There were eight subgroupings for students used in this analysis based on class, sex, and academic college. The subgroupings for employers were manufacturers and nonmanufacturers. Tables 15 and 16 contain results of the X^2 analyses comparing the frequency of response between student subgroups and manufacturers, and student subgroups and nonmanufacturers on Section II. Section II permitted a total of 336 X^2 comparisons (2 employer subgroups paired with 8 student subgroups on 21 questions). Of this total, 149 were significant at the .01 level (44.3%) and 68 were significant at the .05 level (20.2%). The data shows that students responded

Table 15

Chi-squares Comparing Student Subgroups with Manufacturers (N=30) on Section II - Employer Recruiting Practices

Question Synopsis (from Student Questionnaire)	Student Subgroups							
	Junior Males (N=55)	Junior Females (N=63)	Senior Males (N=84)	Senior Females (N=43)	Arts & Sciences (N=77)	Applied Sciences (N=50)	Business (N=57)	Education (N=61)
1. Interview preference by major	9.09**	16.06**	11.26**	17.91**	13.63**	9.64**	6.98*	23.39**
2. Importance of communications	2.31	2.65	1.06	1.61	4.07	.00	1.82	1.74
3. Commitment of business & applied sciences students	7.70*	15.29**	12.32**	18.47**	11.92**	7.15*	10.52**	23.00**
4. Commitment of arts & sciences students	.98	3.67	7.98*	8.47*	4.34	3.07	5.35	6.67*
5. Company size related to academic preference	2.74	7.29*	1.58	3.88	4.95	.44	1.59	6.18*
6. Company finances related to number of grads hired	6.24*	5.32	1.08	9.20*	3.77	3.45	2.62	7.90*
7. Minority preference	17.55**	17.99**	25.79**	17.56**	22.51**	9.31	17.11**	34.15**

*p < .05
**p < .01

(continued)

Table 15 (continued)

Chi-squares Comparing Student Subgroups with Manufacturers (N=30) on Section II - Employer Recruiting Practices

Question Synopsis (from Student Questionnaire)	Student Subgroups							
	Junior Males (N=55)	Junior Females (N=63)	Senior Males (N=84)	Senior Females (N=43)	Arts & Sciences (N=77)	Applied Sciences (N=50)	Business (N=57)	Education (N=61)
8. Background of top management	15.01**	22.96**	12,84**	23.20**	24.55**	10.28**	8.94*	29.52**
9. Job assignment and academic major	5.61	7.21*	3.51	7.59*	6.10*	3.02	1.67	11.04**
10. Employer training benefits	6.51*	12.33**	14.73**	16.63**	13.53**	12.09**	8.27*	15.45**
11. Preference for specialized vs liberal degrees	8.77*	9.61*	4.53	15.97**	8.42*	3.45	7.67*	16.72**
12. Opportunity for continued education	11.61**	16,08**	11.77**	20.21**	19.55**	10.47**	7.63*	19.23**
13. Salary differential for liberal degree	13.96**	15.03**	10.32**	18.22**	17.87**	10.12**	11.02**	18.45**
14. Effect of grades on job	20.43**	22.14**	22.01**	15.46**	26.94**	12.95**	19.52**	20.93**
15. Preference for women grads	5.15	1.57	8.47*	2.36	3.51	5.28	5.57	2.31

*p < .05
**p < .01

(continued)

Table 15 (continued)

Chi-squares Comparing Student Subgroups with Manufacturers (N=30) on Section II - Employer Recruiting Practices

Question Synopsis (from Student Questionnaire)	Student Subgroups							
	Junior Males (N=55)	Junior Females (N=63)	Senior Males (N=84)	Senior Females (N=43)	Arts & Sciences (N=77)	Applied Sciences (N=50)	Business (N=57)	Education (N=61)
16. Oversupply of business grads	3.98	1.57	4.02	6.02*	6.58*	8.19*	.59	3.14
17. Oversupply of technical grads	13.28**	7.45*	10.63**	10.92**	13.48**	9.42**	7.87*	9.93**
18. Oversupply of education grads	5.86	4.74	5.96	3.97	4.35	4.80	8.27*	3.35
19. Oversupply of science grads	6.63*	9.56**	8.41*	3.71	7.07*	5.90	6.42*	8.23*
20. Oversupply of social sciences grads	5.02	6.15*	5.37	5.78	5.79	2.60	6.63*	5.77
21. Oversupply of fine arts grads	12.41**	14.45**	7.10*	16.38**	11.29**	5.37	15.07**	15.49**

*p < .05
**p < .01

Table 16

Chi-squares Comparing Student Subgroups with Nonmanufacturers (N=36) on Section II - Employer Recruiting Practices

Question Synopsis (from Student Questionnaire)	Student Subgroups							
	Junior Males (N=55)	Junior Females (N=63)	Senior Males (N=84)	Senior Females (N=43)	Arts & Sciences (N=77)	Applied Sciences (N=50)	Business (N=57)	Education (N=61)
1. Interview preference by major	8.16*	18.04**	12.00**	20.75**	13.52**	10.06**	7.39*	27.29**
2. Importance of communications	2.82	3.45	1.45	2.19	5.17	.00	2.04	2.33
3. Commitment of business & applied sciences students	1.91	7.37*	6.72*	15.22**	5.53	2.22	5.60	15.45**
4. Commitment of arts & sciences students	4.91	5.92	9.14*	6.35*	5.69	2.49	8.21*	7.27*
5. Company size related to academic preference	10.47**	16.44**	8.61*	12.12**	14.27**	5.20	8.21*	16.03**
6. Company finances related to number of grads hired	11.92**	8.52*	3.58	13.51**	7.28*	6.95*	6.10*	11.88**
7. Minority preference	21.29**	21.53**	29.92**	21.75**	26.40**	12.36**	20.34**	39.10**

*p < .05
**p < .01

(continued)

Table 16 (continued)

Chi-squares Comparing Student Subgroups with Nonmanufacturers (N=36)
On Section II - Employer Recruiting Practices

Question Synopsis (from Student Questionnaire)	Student Subgroups							
	Junior Males (N=55)	Junior Females (N=63)	Senior Males (N=84)	Senior Females (N=43)	Arts & Sciences (N=77)	Applied Sciences (N=50)	Business (N=57)	Education (N=61)
8. Background of top management	23.36**	33.05**	21.27**	32.23**	35.49**	17.11**	15.69**	40.46**
9. Job assignment and academic major	.36	4.15	1.98	2.54	.80	.14	2.05	7.37*
10. Employer training benefits	10.97**	18.14**	21.50**	23.03**	19.84**	17.87**	13.35**	21.74**
11. Preference for specialized vs liberal degree	10.18**	10.13**	4.28	15.21**	7.38*	4.48	10.67**	16.14**
12. Opportunity for continued education	14.67**	19.98**	14.87**	24.29**	23.85**	13.47**	10.34**	23.30**
13. Salary differential for liberal degree	15.66**	17.11**	17.15**	16.05**	26.22**	7.82*	12.72**	20.70**
14. Effect of grades on job	23.83**	25.79**	25.71**	18.14**	31.25**	15.26**	22.79**	21.41**

*p < .05
**p < .01

(continued)

Table 16 (continued)

Chi-squares Comparing Student Subgroups with Nonmanufacturers (N=36) on Section II - Employer Recruiting Practices

Question Synopsis (from Student Questionnaire)	Student Subgroups							
	Junior Males (N=55)	Junior Females (N=63)	Senior Males (N=84)	Senior Females (N=43)	Arts & Sciences (N=77)	Applied Sciences (N=50)	Business (N=57)	Education (N=61)
15. Preference for women grads	9.29**	4.45	14.07**	3.91	6.90*	9.09*	10.31**	5.67
16. Oversupply of business grads	2.10	.64	1.28	.80	1.10	4.19	8.53*	.007
17. Oversupply of technical grads	5.91	5.60	1.88	1.18	4.23	4.40	1.46	2.44
18. Oversupply of education grads	8.14*	7.07*	7.84*	5.70	6.35*	6.60*	10.96**	5.26
19. Oversupply of science grads	6.88*	7.47*	2.97	5.08	5.20	6.00*	3.92	1.84
20. Oversupply of social sciences grads	2.03	3.08	2.45	3.00	2.77	.26	3.47	2.90
21. Oversupply of fine arts grads	15.78**	17.37**	9.09*	17.01**	13.63**	8.18*	17.66**	16.50**

*$p < .05$
**$p < .01$

significantly different than the employers as follows:

Student Group	Number of Questions Showing Significance on Section II (out of a possible 21) Man.	%	Nonman.	%
Junior Males	13	61.9	14	66.7
Junior Females	15	71.4	14	66.7
Senior Males	13	61.9	13	61.9
Senior Females	15	71.4	13	61.9
Arts & Sciences	14	66.7	12	57.1
Applied Sciences	9	42.9	12	57.1
Business	14	66.7	15	71.4
Education	16	76.2	14	66.7

The examination of the number of differences showed that Education students responded differently than employers most often, with Arts & Sciences and Business students next. Applied Sciences showed the fewest disagreements. The actual frequencies of response for all groups on all questions in Section II, III, and IV can be found in Appendices I through N.

Table 17 gives the frequencies with which each individual question showed a significant difference (at .05 level) between one of the employer subgroups and one of the student subgroups. Examination of this table reveals that 13 of the 21 questions show significant differences on more than half of the comparisons. From these, the following items distinguished between subgroups most frequently:

Question Number	Subject of Question
1	Employers preference for business and arts & sciences graduates to interview.
8	Employers seek backgrounds similar to top management.
10	Employers usually train before placing a new graduate.
12	Opportunity for further education is provided.
13	There is a salary differential for liberal arts grads.
14	Grades determine job.

In referring to the actual response frequencies in the appendix, it is noted that the employers generally agree with statements 1, 12, and 14;

Table 17

Frequency with which Individual Questions Show Significance[1] Between Employers and Students on Section II

(Out of a Possible 16 Comparisons—Question Numbers from Student Form)

Question Synopsis	Significance with Respect to Manufacturers & All Students	Significance with Respect to Nonmanufacturers & All Students	Total
1. Interview preference by major	8	8	16
2. Importance of communications	-	-	-
3. Commitment of business & applied sci students	8	4	12
4. Commitment of arts & sciences students	3	4	7
5. Company size related to academic preference	2	7	9
6. Company finances related to number of grads hired	3	7	10
7. Minority preference	7	8	15
8. Background of top management	8	8	16
9. Job assignment and academic major	4	1	5
10. Employer training policies	8	8	16
11. Preference for specialized vs liberal degrees	6	6	12

[1] $p < .05$

(continued)

Table 17 (continued)

Frequency with which Individual Questions Show Significance[1] Between Employers and Students on Section II

(Out of a Possible 16 Comparisons–Question Numbers from Student Form)

Question Synopsis	Significance with Respect to Manufacturers & All Students	Significance with Respect to Nonmanufacturers & All Students	Total
12. Opportunity for continued education	8	8	16
13. Salary differential for liberal degree	8	8	16
14. Effect of grades on job	8	8	16
15. Preference for women grads	1	5	6
16. Oversupply of business grads	3	1	4
17. Oversupply of tech grads	8	-	8
18. Oversupply of education grads	1	6	7
19. Oversupply of science grads	6	3	9
20. Oversupply of social science grads	2	-	2
21. Oversupply of fine arts grads	7	8	15

[1] $p < .05$

were divided on 13, as noted earlier; and disagreed with statements 8 and 10. Students, while responding in the same general trend as the employers on questions 1, 8, 10, 12, 13, and 14, exhibited high rates of "no opinions" to these questions, thus, giving rise to the large statistical differences.

Tables 18 and 19 display the X^2s that test the differences between response frequencies for employer subgroups and student subgroups on Section III of the student questionnaire which deals with student rationale of education and employment. There are a possible 240 comparisons in this section (8 student subgroups paired with 2 employer subgroups on 15 questions). Of this total, 20 comparisons are significantly different at the .05 level (8.3%) and 90 are significant at the .01 level (37.5%). These differences were distributed among the subgroups in the following way:

	Number of Questions Showing Significance on Section III (out of a possible 15)			
Student Group	Man.	%	Nonman.	%
Junior Males	8	53.3	7	46.7
Junior Females	8	53.3	7	46.7
Senior Males	6	40.0	7	46.7
Senior Females	7	46.7	7	46.7
Arts & Sciences	7	46.7	8	53.3
Applied Sciences	7	46.7	7	46.7
Business	4	26.7	5	33.3
Education	8	53.3	6	40.0

The Business student subgroup showed the fewest significant differences while the Junior Males, Junior Females, and Arts & Sciences subgroups had the most differences on this section. Table 20 shows the number of times an individual question showed significance between either employer subgroup and any student subgroup in Section III.

Table 18

Chi-squares Comparing Student Subgroups with Manufacturers (N=30) on Section III - Student Rationale of Education and Employment

Question Synopsis (from Student Questionnaire)	Student Subgroups							
	Junior Males (N=55)	Junior Females (N=63)	Senior Males (N=84)	Senior Females (N=43)	Arts & Sciences (N=77)	Applied Sciences (N=50)	Business (N=57)	Education (N=61)
1. Value of college and employment	1.96	1.12	2.08	1.96	1.22	2.17	2.69	1.20
2. Value of major and employment	.00	3.48	.85	2.97	2.77	1.81	.99	6.13*
3. Responsibility of university to job market	.35	1.89	.23	.31	5.92	.28	.16	.00
4. Grad is limited only by abilities	5.50	5.37	2.04	4.67	4.03	3.08	3.08	5.93
5. Immediate use of skills	10.77**	10.08**	10.19**	20.12**	8.57*	22.57**	3.15	18.91**
6. Ability more important than knowledge	1.79	2.79	.22	2.95	1.08	3.81	1.42	1.71
7. A & S students unrealistic about job market	6.24*	16.64**	3.54	15.86**	16.07**	3.36	4.33	15.66**

*p <.05
**p <.01

(continued)

Table 18 (continued)

Chi-squares Comparing Student Subgroups with Manufacturers (N=30)
on Section III - Student Rationale of Education and Employment

Question Synopsis (from Student Questionnaire)	Student Subgroups							
	Junior Males (N=55)	Junior Females (N=63)	Senior Males (N=84)	Senior Females (N=43)	Arts & Sciences (N=77)	Applied Sciences (N=50	Business (N=57)	Education (N=61)
8. Use of skills by tech grads	10.18**	17.07**	19.61**	20.64**	22.06**	9.20*	13.78**	22.00**
9. Importance of summer jobs	2.91	2.96	4.81	5.74	4.80	3.92	4.64	1.69
10. Value of a business "minor"	9.98**	24.69**	10.68**	23.45**	22.65**	17.72**	2.82	23.58**
11. Long-range value of college	11.86**	16.56**	4.01	5.55	12.10**	7.52*	5.62	12.24**
13. Use of Placement Center	13.47**	8.23*	9.43**	8.41**	17.35**	7.08*	10.88**	3.92
14. Students have idea of ideal job	41.49**	44.63**	44.38**	44.88**	54.32**	41.61**	27.68**	55.15**
15. Change major if job opportunities changed	10.68**	17.69**	14.65**	9.02*	20.92**	14.38**	9.13*	11.87**
16. Expect to settle for less than ideal job	2.56	2.41	.13	1.50	.00	1.66	.75	2.13

*$p < .05$
**$p < .01$

Table 19

Chi-squares Comparing Student Subgroups Compared with Nonmanufacturers (N=36) on Section III - Student Rationale of Education and Employment

Question Synopsis (from Student Questionnaire)	Student Subgroups							
	Junior Males (N=55)	Junior Females (N=63)	Senior Males (N=84)	Senior Females (N=43)	Arts & Sciences (N=77)	Applied Sciences (N=50)	Business (N=57)	Education (N=61)
1. Value of college and employment	1.49	1.32	.73	.92	1.44	1.07	.37	1.21
2. Value of major and employment	.14	2.23	.39	2.05	1.65	1.41	2.06	4.86
3. Responsibility of university to job market	2.05	2.72	1.82	2.63	4.90	1.64	3.48	3.35
4. Grad is limited only by abilities	2.27	3.04	1.16	1.86	1.94	.73	.65	3.79
5. Immediate use of skills	9.86**	7.96*	8.91*	19.21**	7.96*	22.66**	3.48	16.41**
6. Ability more important than knowledge	1.88	1.53	4.73	5.19	.47	3.82	4.02	5.72
7. A & S students unrealistic about job market	8.06*	20.08**	4.96	19.28**	20.60**	4.81	4.98	18.68**

*p < .05
**p < .01

(continued)

Table 19 (continued)

Chi-squares Comparing Student Subgroups Compared with Nonmanufacturers (N=36) on Section III - Student Rationale of Education and Employment

Question Synopsis (from Student Questionnaire)	Student Subgroups							
	Junior Males (N=55)	Junior Females (N=63)	Senior Males (N=84)	Senior Females (N=43)	Arts & Sciences (N=77)	Applied Sciences (N=50)	Business (N=57)	Education (N=61)
8. Use of skills by tech grads	5.50	1.94	3.46	2.39	5.49	6.36*	2.17	1.66
9. Importance of summer jobs	5.17	.77	7.60*	10.40**	6.05*	8.74*	6.18*	1.87
10. Value of a business "minor"	8.19*	23.63**	9.22**	21.76**	21.75**	15.87**	2.66	22.00**
11. Long-range value of college	32.42**	40.26**	20.28**	19.59**	34.96**	29.93**	21.11**	31.42**
13. Use of Placement Center	11.47**	6.66*	10.62**	5.82	15.01**	6.36	12.56**	1.97
14. Students have idea of ideal job	41.99**	45.25**	45.24**	45.06**	55.12**	41.88**	27.91**	55.59**
15. Change major if job opportunities changed	25.77**	36.67**	33.93**	22.72**	42.49**	28.98**	23.41**	28.82**
16. Expect to settle for less than ideal job	2.22	2.33	.42	1.23	.00	1.31	.82	1.83

*p < .05
**p < .01

Table 20

Frequency with which Individual Questions Show Significance[1] Between Employers and Students on Section III

(Out of a Possible 16 Comparisons–Question Numbers from Student Form)

Question Synopsis	Significance with Respect to Manufacturers & All Students	Significance with Respect to Nonmanufacturers & All Students	Total
1. Value of college and employment	-	-	-
2. Value of major and employment	1	-	1
3. Responsibility of university to job market	-	-	-
4. Grad is limited only by abilities	-	-	-
5. Immediate use of skills	6	7	13
6. Ability more important than knowledge	-	-	-
7. A & S student unrealistic about job market	5	5	10
8. Use of skills by tech grad	8	1	9
9. Importance of summer jobs	-	5	5
10. Value of a business "minor"	7	7	14
11. Long-range value of college	5	8	13

[1] $p < .05$

(continued)

Table 20 (continued)

Frequency with which Individual Questions Show Significance[1] Between Employers and Students on Section III

(Out of a Possible 16 Comparisons—Question Numbers from Student Form)

Question Synopsis	Significance with Respect to Manufacturers & All Students	Significance with Respect to Nonmanufacturers & All Students	Total
13. Use of Placement Center	7	5	12
14. Students have idea of ideal job	8	8	16
15. Change major if job opportunities changed	8	8	16
16. Expect to settle for less than ideal job	-	-	-

[1] $p < .05$

From this table it can be seen that the following statements were responded to with significant differences most often:

Question Number	Subject of Question
10	Business "minor" would be valuable to A & S students
14	Students have a good idea of their ideal job
15	Students would change major if job opportunities changed

Actual response frequencies to these questions show that almost all employers consider the business "minor" a good idea for students; while students, although generally agreeing, show a wide range of differences. These students indicated that they did have a firm idea of the kind of job they wanted. Employers were more divided on this point, but the majority agreed with students. On question 15 a majority of the employers felt students would probably change majors if the job opportunity changed while students said they probably would not.

Section IV was a series of three rank-order questions covering employment opportunities and desired skills. Table 21 contains the Spearman rank-order correlation between student responses and employer responses for these questions. Males and Applied Sciences were the only subgroups to show significant correlations with employers on the question dealing with availability of jobs (question 1). The second question, dealing with necessary training, showed a high degree of agreement between students and employers with only 4 of 11 comparisons not having a significant correlation. The third question (question 4 from the student questionnaire) showed only three significant correlations between employer and student responses to this question.

Examination of the correlations in Table 21 shows that while students and employers agree on the relative specificity of training

Table 21

Spearman Correlation Coefficients Between Students and Employers on Rank-Order Questions in Section IV[1]

Comparison	Question (No. from Student Questionnaire)		
	(1) Where are most jobs available	(2) Where is specific training most necessary	(4) Importance of skill areas
Manufacturers vs			
Junior Males	.732*	.550	1.000*
Junior Females	.286	.630*	.675
Senior Males	.687*	.025	1.000*
Senior Females	.061	-.300	.000
Arts & Sciences	.548	.630*	.600
Applied Sciences	.695*	.825*	1.000*
Business	.511	.730*	.700
Education	.466	.498	.200
Nonmanufacturers vs			
Junior Males	.720*	.752*	.800
Junior Females	.352	.782*	.375
Senior Males	.618*	.945*	.800
Senior Females	.164	.761*	.200
Arts & Sciences	.536	.827*	.400
Applied Sciences	.607*	.852*	.800
Business	.518	.891*	.700
Education	.548	.752*	.000

*$p < .05$

[1]Questions 1 and 2 contained 11 items each to be ranked while question 4 contained 5 items.

necessary for particular employment areas (question 2) there is only moderate agreement about where jobs are available (question 1). The final question dealt with the ranking of specific skills desired by employers. It should be remembered that the employers themselves disagreed on this question; manufacturers ranking technical skills first and nonmanufacturers ranking leadership skills first (see Appendix N, question 3). The students also exhibited disagreement on the rankings for this question (see Appendix K, question 4). The only correlations found to be significant on this question were between three student subgroups and manufacturers. They were Junior Male, Senior Male, and Applied Sciences. In considering this data it should be noted that the general trends of the rankings were similar (correlations were generally high), but due to the few items statistical significance was not reached in most cases.

DISCUSSION

The differences in perception of students versus employers identified in this study have important implications for students, employers, and the university. Before discussing these implications it might be valuable to define the scope of the differences found. There was a total of 576 possible chi-square comparisons from Sections II and III of the questionnaire (based on 2 employer subgroups paired with 8 student subgroups on 36 questions). Eighty-eight of these were significantly different at the .05 level (15.3%) and 239 at the .01 level (41.5%) for a total of 56.8% of the possible differences identified as statistically significant.[1]

An examination of the comparison of students with employers on Section II (employer recruiting practices) and III (student rationale of education and employment) shows several things. First, there were more disagreements on Section II than on Section III. This suggests that employers understand students better than students understand employers' recruiting practices.

A second and possibly more interesting point is the distribution of the differences. The student subgroups showing the fewest differences with employers are in order: Applied Sciences, Business, and Senior Males. The subgroups showing the most differences with employers are respectively: Junior Females, Education, Junior Males, and Senior

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[1]If level of confidence is to be taken into account, 5 should be subtracted from any percentage cited at the .05 level of significance and 1 from any percentage cited at the .01 level.

Females. These overall differences indicate that the male dominated and business oriented student subgroups more frequently answered questions in the same way as employers. Based on the traditional expectation of male participation in these academic specialities and work areas, these results are as might have been expected. It should be noted, however, that the percentage of differences between the subgroup with the fewest significant differences (Applied Sciences with 48.6%) and the group with the most (Education with 61.1%) is relatively small, and that all groups tend to respond substantially different from the responses of employers.

A similar situation is noted in Section IV of the questionnaire. Table 21 shows that of 48 correlations between students and employers on the questions, only 21 (43.8%) were found to be significant. Again, we find that the groups in greatest agreement with employers are the predominantly male subgroups.

If, as the study by Drake, Kaplan, and Stowe (1972) indicates, students who choose to enter an occupation for which they are prepared have an advantage in securing employment, then it may be inferred that many of the students who participated in this study are not going to have an advantage in securing employment. The high level of disparity between employers and students, especially in the section dealing with recruiting practices, indicates that many of those students who are seeking employment do not have adequate information about the employment process. This is expected to be a disadvantage to the student.

There are also some important implications for the employer in these findings. Presumably, it is to the employer's advantage to select from as large a pool of qualified graduates as possible. However, the size of this pool could be reduced because students are inadequately counseled or lack basic knowledge in how to seek the jobs they want. Employers should be aware that more specific information about desired skills would probably increase the number and may improve the preparation of candidates.

The university must also look at the differences in this study as a reflection on their role in student placement and preparation. The data indicate (Table 4) that, in general, students seek vocational counseling on a regular basis. It is not enough, however, to merely provide counseling services. Students seem to need more knowledge of employers' needs, attitudes, and preferences. An integrated program, then, of vocational counseling, vocational data, and aid in placement with an employer seems necessary. If a university cannot provide these services then it must face the possibility that employers will cease to consider their graduates as an important source of prospective employees. This also suggests that in the future the more perceptive student might choose to attend a university where vocational counseling and placement is given a higher priority.

An example from the data may serve to illustrate the problems that students may face. An overwhelming majority of students agreed that future employability was a major consideration in choosing to attend college; employers also agreed on this point. This finding is also

in agreement with Rieder's (1974) survey for the National Institute of Education which indicates that the general public considers college an aid in securing better jobs. The current sample of students, however, had mixed attitudes about whether students choose a major because it would help them to secure a job. In fact, a majority of several sub-groups (Females, Junior Females, Senior Females, Arts & Sciences, and Education) said their major was not selected to help them get a job. If this is true, how then can these students feel that choosing to attend college is important in improving chances for employment. We might interpret these findings to indicate that students, especially female students, have been sold on the importance of college; but once having made that decision they do not view the selection of a major as important in the vocational process. This might also suggest that these are the more traditional females who tend to view college as a social experience.

This finding was apparently not a surprise to employers as they had mixed perceptions of the importance students attach to the selection of a major. It is possible that in selecting graduates, employers are often confronted with a prospective employee who thought that college alone was the key to employment and that selection of a major was only of minor significance.

A recent study by Edge and Greenwood (1973) indicates that business employers felt that students did not possess the hierarchy of skills that they, as employers, considered desirable. This hierarchy of skills is defined as people oriented, business oriented, and quantitatively

oriented skills. This point of view is supported by some of the data in the present study. There is a notable lack of agreement between employers and students in their ranking of skills necessary for employment. It would seem that the awareness of the relative desirability of employment skills should not only be important to students but to the university where these skills become important in the development of programs for students.

Part of the above problem probably occurs because job placement and vocational counseling occur separately. An analysis of the student usage of the various vocational counseling services might illuminate this. The Placement Center was rated first by students as the service to gather and disseminate new job information (employers rated it first also). Looking at Table 4, however, it is seen that the Placement Center is ranked next to last in usage as a vocational counseling service. Students, then, apparently see a distinction between the gathering and disseminating of information and counseling.

There are several implications for the university in this data. Efforts must be made to develop a better relationship between employers and the various counseling agencies so that information about jobs and desired skills can be gathered and made available to students.

Another problem that has probably maintained the system is that students generally think that counseling is helpful and that counselors are at least sufficiently informed about job information. This, however, is not supported by the large differences found in these data. In addition, the large number of students (24% of the sample) who never

sought counseling or didn't know where to find it (5%) reflects a failure of the university to insure that students are provided with a service that is beneficial to the university and employers as well as students. The situation is not unique to this university. Many authors such as Rieder (1974), Faia (1971) and Thain (1970) have called for improved counseling and cooperation between employers and universities for the benefit of all concerned, but particularly for the benefit of the student.

This study has attempted to determine if there are differences in opinion between students and employers on some specific aspects of employment practices, skills desired by employers, and student rationale of education and employment. The results have shown that there are a large number of statistical differences between the groups. There are, however, a number of specific factors relative to this particular study that should be kept in mind when interpreting its results. The questions in each section, while having an underlying commonality, do not always lend themselves to grouping for the purpose of making generalizations on specific points.

In addition, the nature of the chi-square test as it relates to the manner in which responses were tabulated should be understood. The responses from subjects fell on a three point scale: agree, disagree, and no opinion. In general the responses by employers had only a very small portion in the "no opinion" category. Students, on the other hand, often had substantial percentages of "no opinion" responses. The result of this distribution of "no opinion" responses resulted in a number of significant differences. While this is a

valid difference indicating a lack of knowledge on the part of the student, it cannot always be construed as a difference of opinion.

Based on these shortcomings some further research is suggested. An attempt should be made to more specifically define employers' preference for particular majors to fill given jobs and to identify skills that employers consider important. This information should be gathered in a more open-ended fashion so as to determine its nature in operational terms. Studies should also be conducted in order to specifically identify which subgroupings of students need improved counseling the most.

In addition to the above suggested research there are several recommendations for improving current counseling methods that may be apparent from the data of this study. Students should be encouraged to seek counseling and be made aware of where it can be found. A rapport should be sought with employers by counseling services in order to obtain more specific job information and skills needed. Finally, since faculty members were rated so highly as sources of counseling, specific job related information should be made available to them.

SUMMARY AND CONCLUSION

Today's college students face a complex array of career alternatives. Their ability to make a practical choice among these alternatives is a partial function of the information they have about jobs (Holland, 1959). Studies of recent college graduates show that many are not employed in areas for which they have prepared (Perella, 1973); or in other cases, they are not, in the opinion of their employers, adequately prepared for work in their chosen fields (Edge & Greenwood, 1973).

The purpose of this study was to determine if there are significant differences of opinion about academic preparation and employment between students and employers. Questionnaires containing similar items were sent to a sample of students from a large midwestern university and to a sample of employers who have used the university's placement center within the last four years. The student sample was divided into eight subgroups on the basis of class, sex, and academic area; while employers were separated into manufacturers and nonmanufacturers. Chi-square and correlational analyses were used to compare student and employer responses. Student subgroup comparisons indicated disagreement on areas related to employer preference for specific academic preparation. Employers agreed with each other to a greater degree but still had some differences. These differences were found on questions dealing with the availability and supply of graduates in different fields.

The comparisons between employers and students tend to support the hypothesis that there are significant differences of opinion about eventual employment between the two groups. The chi-square analysis shows that 56.4% of the questions in Sections II and III of the questionnaires elicited significantly different responses between employers and students ($p < .05$). The correlational analysis on Section IV showed similar results with only 44.8% of the comparisons having significant correlations. The predominantly male subgroups tended to agree most with employers. However, even the subgroup with the least amount of disagreement, namely Applied Sciences, disagreed with employers on 49% of the questions in Sections II and III.

It appears then that there are some major differences of opinion between students and employers on many of the items studied here. These differences came about as a result of either divergent opinions or as excessive "no opinion" responses by students. Whatever the nature of the difference, it seems safe to say that if students expect to increase their chances of finding employment related to their field of study, they should plan their academic careers to more nearly conform with the desires of prospective employers. It is not the intention here to suggest that students must subjugate their intellectual curiosity to the practical demands of business and industry; however, they should weigh this freedom with practicality if they wish to enhance their employability. It is at this point that the university can and should be of service. Data of a more specific nature should be collected to identify those specific areas employers consider important. This information

could then be presented to the student in ways that would enable him to integrate his intellectual curiosity with a core of saleable skills. Additional exploration should also be done to determine the degree to which employers would be willing to participate in expanding the amount of specific job and employment information available to students.

Progress in this area should result in a more efficient use of a person's skills and satisfaction for the graduate in finding employment for which he prepared.

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Appendix A

WESTERN MICHIGAN UNIVERSITY
Office of Institutional Research

STUDENT EMPLOYMENT QUESTIONNAIRE

Name_____ Sex: Male_____ Female_____

SECTION I. Student Background Information - So data can be analyzed in terms of student characteristics.

1. What is your major? (1)_____ (2)_____

2. What is your minor? _____

In the following questions (3-7), check the appropriate answer.

3. Your year in school: Junior_____ Senior_____

4. What do you intend to do when you complete your degree?
_____Work in business and industry
_____Work in government
_____Teach
_____Go to graduate school
_____Other (specify)_____

5. What is your current employment status?
_____Don't work
_____Part-time job
_____Full-time job

6. If you do work, will you continue with this employer after graduation?
_____Yes _____No

7. Have you accepted a position yet for after graduation?
_____Yes _____No

8. If you have ever sought vocational counseling to assist you in academic planning while at Western, please check the service(s) used.
_____a. Testing Services
_____b. Placement Center
_____c. Counseling Center
_____d. College in which you are enrolled
_____e. Individual departments (or faculty members)
_____f. Other (specify)_____
_____g. Wanted help but didn't know where to go
_____h. Never sought any counseling

For questions 9-11, please refer to letter code in question 8 (a through f).

9. If you did get counseling was it helpful to you? (Place letters checked in question 8 in appropriate spaces below.)
_____very helpful _____slightly helpful
_____fairly helpful _____not helpful at all

10. How would you rate the individuals with whom you spoke as far as being informed about the job market for persons with your academic background? (Place letters from question 8 in appropriate spaces below.)
_____very well-informed
_____sufficiently informed
_____not at all well-informed

11. Who should have primary responsibility for gathering and disseminating information about new job opportunities? (Rank order top three services by letter code from question 8.)
_____1st
_____2nd
_____3rd

Please check the column which best describes your attitude about the following statements.

SECTION II. Student Impressions of Employers/Companies

	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
1. Employers from business and industry that come to campus to recruit want to interview only business or applied sciences students.	____	____	____	____	____
2. Communications is considered an important skill by business and industrial employers.	____	____	____	____	____
3. It is assumed by employers that business and applied sciences students have made a personal commitment to work in business and industry.	____	____	____	____	____
4. Arts and sciences students have not made a commitment to work in business and industry.	____	____	____	____	____
5. Large companies hire graduates from a broader range of academic backgrounds than smaller companies.	____	____	____	____	____
6. A company's financial condition affects only the number of new graduates hired, not the variety of academic major hired.	____	____	____	____	____
7. Minority graduates are given preference for positions regardless of major.	____	____	____	____	____
8. The top management of a company seeks to recruit college graduates with academic backgrounds similar to their own.	____	____	____	____	____
9. The job which a new graduate gets within a given company is determined by his academic major.	____	____	____	____	____
10. In most companies graduates are hired with no specific job in mind to be placed after the completion of a training program.	____	____	____	____	____
11. Companies feel a liberally educated graduate will be more valuable to the company in the long-run than graduates with specialized degrees.	____	____	____	____	____
12. Employers provide adequate opportunity for graduates to continue their education in special skill areas.	____	____	____	____	____
13. Starting salaries for liberal arts graduates are lower than for business or technical graduates for equivalent jobs.	____	____	____	____	____
14. The job which a new graduate gets within a company is determined primarily by his/her college grades.	____	____	____	____	____
15. Women graduates are given preference for positions regardless of major.	____	____	____	____	____
As far as the job market is concerned, there is currently an oversupply of college graduates in:					
16. business	____	____	____	____	____
17. applied sciences (engineering and technology)	____	____	____	____	____
18. education	____	____	____	____	____
19. physical sciences (math, chemistry, etc.)	____	____	____	____	____
20. liberal arts and social sciences	____	____	____	____	____
21. fine arts	____	____	____	____	____

SECTION III. Students' Impressions of Education and Future Employment

1. Future employability was a major consideration in deciding to attend college.	____	____	____	____	____
2. My major was selected because I felt it would help me get a job.	____	____	____	____	____
3. The university has the primary responsibility of preparing students for the immediate job market.	____	____	____	____	____
4. After a graduate has a job he is limited only by his own abilities not by his college major.	____	____	____	____	____
5. Skills such as accounting and finance are used immediately in business.	____	____	____	____	____

	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
6. The ability and desire to learn is more important than the actual knowledge a graduate brings to a job.	____	____	____	____	____
7. Arts and sciences students have a less realistic view than business and applied sciences students of what employers want in the way of academic preparation.	____	____	____	____	____
8. Graduates of engineering and technology usually take jobs that require fullest use of their technical skills.	____	____	____	____	____
9. The nature of summer jobs held is an important consideration for employers when evaluating a student.	____	____	____	____	____
10. It would be of great value for an arts and sciences student to pick up a business "minor" (a block of business courses which at least introduce the student to business).	____	____	____	____	____
11. I expect my academic preparation to be of great value to me in five or ten years.	____	____	____	____	____
12. Most seniors I know at Western don't plan to use the Placement Office.	____	____	____	____	____
13. I probably will use the Placement Office.	____	____	____	____	____
14. I have a good idea of what kind of job I want.	____	____	____	____	____
15. I would change my major if job opportunities drastically decreased for persons with my major.	____	____	____	____	____
16. I expect to settle for something less than my ideal job.	____	____	____	____	____

SECTION IV.

Please rank the top 5 employment areas according to your opinion or preference. (1=highest)

	(1) Where are most jobs available?	(2) Where is specific training most necessary?	(3) Where would you like to work?
Accounting firms	____	____	____
Banks	____	____	____
Clinics	____	____	____
Educational institutions	____	____	____
Engineering firms	____	____	____
Government	____	____	____
Hospitals	____	____	____
Insurance companies	____	____	____
Manufacturing and process companies	____	____	____
Retail department store chains	____	____	____
Sales departments of manufacturing companies	____	____	____

4. Rank in order of importance to employers the following skill areas (1=highest).
   _____technically oriented skills (engineering, science, accounting, economics, etc.)
   _____people oriented skills (social skills, sensitivity to human relations)
   _____general quantitative skills (computer use, statistics)
   _____communication skills (written and spoken communication)
   _____leadership skills (ability to pull a work group together)

SECTION V.

This section is intended to get the student's impression of employment prospects for different curriculums at WMU. Please use the broad categories defined below when considering your response.

Business - accounting, finance, etc.
Applied Sciences - engineering and technology
Liberal Arts - English, fine arts, languages
Physical Sciences - math, chemistry, physics, geology, etc.
Education - elementary and secondary, blind rehabilitation, occupational therapy
Social Sciences - psychology, sociology, political science, history, etc.

	Business	Applied Sciences	Liberal Arts	Physical Sciences	Education	Social Sciences
1. Compared to graduates from other large state universities, WMU graduates from which of the indicated areas						
a) do better in jobs.	____	____	____	____	____	____
b) do as well in jobs.	____	____	____	____	____	____
c) don't do as well in jobs.	____	____	____	____	____	____

	Business	Applied Sciences	Liberal Arts	Physical Sciences	Education	Social Sciences
2. In placing graduates in jobs, in which fields do you feel the Placement Office does a						
a) good job.	____	____	____	____	____	____
b) fair job.	____	____	____	____	____	____
c) poor job.	____	____	____	____	____	____
3. Compared to graduates from other large state universities, the ease with which WMU degree holders are placed is						
a) greater.	____	____	____	____	____	____
b) about the same.	____	____	____	____	____	____
c) lesser.	____	____	____	____	____	____

4. WMU's academic standards in relation to "Big Ten" universities are (check one):

_____much higher
_____higher
_____the same
_____lower
_____much lower

Comments:

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Fold where indicated so that address is visible. Staple or tape securely.

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WESTERN MICHIGAN UNIVERSITY

KALAMAZOO, MICHIGAN
49001

E. J. Asher, Jr., Director
Office of Institutional Research
Western Michigan University
Kalamazoo, Michigan 49001

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WESTERN MICHIGAN UNIVERSITY

OFFICE OF INSTITUTIONAL RESEARCH

KALAMAZOO, MICHIGAN
49001

March 25, 1974

Dear Student:

You have been selected to participate in a study of student opinions of employment prospects. This study is an attempt to formulate a picture of what role the student feels his education plays in getting a job. In order to get the opinion of those students most concerned with this topic, the survey is limited to juniors and seniors only. We feel the results of this study will help the university to better understand and meet the needs of students who will be entering the job market.

Enclosed you will find a self-addressed, stamped questionnaire which should take approximately fifteen minutes to complete. When you are finished simply staple or tape where indicated on the questionnaire and drop in the mail.

We hope you will appreciate the important nature of this study. May we thank you in advance for your valued participation.

Yours truly,

Ray V. Montagno

Ray V. Montagno
Research Assistant

RVM:sg
Encl.

Appendix C

Follow-up Post Card to Students

A REMINDER

Dear Student:

Recently our office sent some materials to you in conjunction with our study of student employment attitudes. Unfortunately, we have not heard from you yet. We hope you will help us in this project by completing the self-addressed, stamped questionnaire and returning it. Thank you.

Sincerely,

Ray Montagno, Research Assistant
Office of Institutional Research
Western Michigan University

WESTERN MICHIGAN UNIVERSITY

OFFICE OF INSTITUTIONAL RESEARCH

KALAMAZOO, MICHIGAN 49081

April 16, 1974

Dear Student:

Approximately three weeks ago a questionnaire was sent to you concerning student opinion about employment after graduation. We have not as yet received a reply from you. In the event that you have misplaced the original questionnaire, we have enclosed another. We realize it is close to the end of the semester and you are very busy, but we would appreciate you taking the time to help with this important project.

Student feedback in this area is necessary if the University is to improve its career counseling services. We hope you will see this need and decide to participate.

Simply complete the self-addressed, stamped questionnaire and drop it in the mail. Thank you for your time.

Yours truly,

Ray Montagno

Ray Montagno
Research Assistant

RM:sg

Appendix E

EMPLOYER QUESTIONNAIRE ON COLLEGE GRADUATE EMPLOYMENT

Name_____

SECTION I.

1. Your title _____

2. From the following list, how would you classify your organization?

_____Accounting firm	_____Hospital
_____Bank	_____Insurance company
_____Clinic	_____Manufacturing or process company
_____Educational institution	_____Department store chain
_____Engineering firm	_____Sales
_____Government	_____Service
	_____Other (specify)_____

3. Total number of persons employed by your company:
_____(number)

4. Approximately how many new college graduates at the bachelors level did your company hire last year (1973)?
_____(number)

5. At approximately how many universities do you recruit?
_____(number)

SECTION II. This section is intended to obtain an idea of the policies of employers toward the hiring of college graduates. Please place a check in the space that best describes your opinion of each statement.

	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
1. When you come to campus to recruit you want to interview only business or applied sciences students.	____	____	____	____	____
2. Communications is considered an important skill by your company.	____	____	____	____	____
3. It is assumed by your company that business and applied sciences students have made a personal commitment to work in business and industry.	____	____	____	____	____
4. Arts and sciences students have not made a commitment to work in business and industry.	____	____	____	____	____
5. Large companies hire graduates from a broader range of academic backgrounds than smaller companies.	____	____	____	____	____
6. Your company's financial condition affects only the number of new graduates hired.	____	____	____	____	____
7. Minority graduates are given preference for positions regardless of major.	____	____	____	____	____
8. The top management of your company seeks to recruit college graduates with academic backgrounds similar to their own.	____	____	____	____	____
9. The job which a new graduate gets within your company is determined by his academic major.	____	____	____	____	____
10. In your company graduates are hired with no specific job in mind to be placed after the completion of a training program.	____	____	____	____	____
11. Your company feels a liberally educated graduate will be more valuable to the company in the long-run than graduates with specialized degrees.	____	____	____	____	____
12. As an employer, your company provides adequate opportunity for graduates to continue their education in special skill areas.	____	____	____	____	____

		Strongly agree	Agree	Disagree	Strongly disagree	No opinion
13.	Starting salaries for liberal arts graduates are lower than for business or technical graduates for equivalent jobs.	____	____	____	____	____
14.	The job which a new graduate gets within your company is determined primarily by his/her college grades.	____	____	____	____	____
15.	Women graduates are given preference for positions regardless of major.	____	____	____	____	____
16.	In the future the number of college graduates hired by business and industry will decline.	____	____	____	____	____
17.	The decline in college enrollments is in response to reduced demand for college graduates by business and industry.	____	____	____	____	____
18.	Your company regards a degree as a symbol of accomplishment rather than a guarantee of some particular knowledge.	____	____	____	____	____
19.	The university system of America is insensitive to the needs of American industry.	____	____	____	____	____
20.	It is expected that college graduates will continue their formal education on a part-time basis after they take a job with your company.	____	____	____	____	____
	As far as the job market is concerned, there is currently an oversupply of college graduates in:					
21.	business	____	____	____	____	____
22.	applied sciences (engineering and technology)	____	____	____	____	____
23.	education	____	____	____	____	____
24.	physical sciences (math, chemistry, etc.)	____	____	____	____	____
25.	liberal arts and social sciences	____	____	____	____	____
26.	fine arts	____	____	____	____	____

SECTION III. Students' Personal Attitudes - This section is intended to get employers' impressions of some of the personal decisions students face. Responses here will be compared to similar questions asked of students.

1.	Future employability is a major consideration for persons in deciding to attend college.	____	____	____	____	____
2.	College students select particular majors because they feel it will help them get a job.	____	____	____	____	____
3.	The university has the primary responsibility of preparing students for the immediate job market.	____	____	____	____	____
4.	After a graduate has a job he is limited only by his own abilities not by his college major.	____	____	____	____	____
5.	Skills such as accounting and finance are used immediately in business.	____	____	____	____	____
6.	The ability and desire to learn is more important than the actual knowledge a graduate brings to a job.	____	____	____	____	____
7.	Arts and sciences students have a less realistic view than business and applied sciences students of what employers want in the way of academic preparation.	____	____	____	____	____
8.	Graduates of engineering and technology usually take jobs that require fullest use of their technical skills.	____	____	____	____	____
9.	The nature of summer jobs held is an important consideration for your company when evaluating a student.	____	____	____	____	____
10.	It would be of great value for an arts and sciences student to pick up a business "minor" (a block of business courses which at least introduces the student to business).	____	____	____	____	____

	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
11. Employers expect academic preparation to be of great value to graduates in five or ten years.	____	____	____	____	____
12. Your company prefers to use a university placement facility when hiring college graduates.	____	____	____	____	____
13. Students have a good idea of what kind of job they want.	____	____	____	____	____
14. Students would change their major if job opportunities drastically decreased for persons with their major.	____	____	____	____	____
15. Students expect to settle for something less than their ideal job.	____	____	____	____	____

SECTION IV.

Please rank the top 5 employment areas for college graduates according to your opinion.

	(1) Where are most jobs available?	(2) Where is specific training most necessary?
Accounting firms	____	____
Banks	____	____
Clinics	____	____
Educational institutions	____	____
Engineering firms	____	____
Government	____	____
Hospitals	____	____
Insurance companies	____	____
Manufacturing and process companies	____	____
Retail department store chains	____	____
Sales departments of manufacturing companies	____	____

3. Rank in order of importance to your company the following skill areas (1=highest).
   _____technically oriented skills (engineering, science, accounting, economics, etc.)
   _____people oriented skills (social skills, sensitivity to human relations)
   _____general quantitative skills (computer use, statistics)
   _____communication skills (written and spoken communication)
   _____leadership skills (ability to pull a work group together)

4. Who at the university should have the primary responsibility for gathering and disseminating information about job opportunities?
   _____Placement Office
   _____Counseling Center
   _____Individual college (e.g., Arts and Sciences)
   _____Department within college (e.g., Mathematics Department)
   _____Individual faculty members
   _____Other (specify)_____

SECTION V. This section is designed to get an assessment of how Western Michigan University meets the needs of employers. (If your company has never recruited at Western, please ignore this section.) Please use the broad categories defined below when considering your response.

Business - accounting, finance, etc.
Applied Sciences - engineering and technology
Liberal Arts - English, fine arts, languages
Physical Sciences - math, chemistry, physics, geology, etc.
Education - elementary and secondary, blind rehabilitation, occupational therapy
Social Sciences - psychology, sociology, political science, history, etc.

	Business	Applied Sciences	Liberal Arts	Physical Sciences	Education	Social Sciences
1. As an employer, my organization has hired graduates from Western in the following areas:	____	____	____	____	____	____
2. Compared to graduates from other large state universities, WMU graduates from those areas selected in question 1						
a) do better in jobs.	____	____	____	____	____	____
b) do as well in jobs.	____	____	____	____	____	____
c) don't do as well in jobs.	____	____	____	____	____	____

3. Western Michigan University's academic standards in relation to "Big Ten" universities are
   _____much higher
   _____higher
   _____the same
   _____lower
   _____much lower

4. How would you rate the job WMU's Career Planning and Placement Office does in serving employers?
   _____excellent _____adequate _____poor

The following questions to be answered at your option are for classification purposes only. All responses will be held in strictest confidence.

5. How would you describe the industry in which your organization is involved?
   _____high growth _____stable
   _____moderate growth _____declining

6. How would you describe the economic condition of your company?
   _____excellent _____marginal
   _____good _____weak

Any comments or suggestions:

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Fold where indicated so that address is visible. Staple or tape securely.

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Mr. Ray Montagno
Office of Institutional Research
Western Michigan University
Kalamazoo, Michigan 49001

Staple or tape here.

Appendix F

WESTERN MICHIGAN UNIVERSITY

OFFICE OF INSTITUTIONAL RESEARCH

KALAMAZOO, MICHIGAN
49001

May 2, 1974

Dear Employer:

We are certain you are aware of the climate of high pressure that exists today in the field of campus recruiting. This pressure undoubtedly affects recruiters as well as students.

In an effort to bring some new insights to the counseling of students at Western Michigan University, a study of employer recruiting practices and attitudes is being conducted. A similar study of student attitudes is being conducted concurrently with this one so that areas of disparity may be identified and adjusted in counseling procedures.

You and your organization have been carefully selected to comprise a highly representative sample of employers. Due to this limited sample, it is critical that we receive a substantial response rate. We hope you will appreciate the importance of this study and decide to participate.

Enclosed you will find a self-addressed, stamped questionnaire. Simply fill it out, fold where indicated, tape or staple it securely, and drop it in the mail.

May we thank you in advance for your valuable time and opinion.

Sincerely,

Ray Montagno

Ray Montagno
Research Assistant

RM:sg
Enclosure

Appendix G

Follow-up Post Card to Employers

OFFICE OF INSTITUTIONAL RESEARCH
WESTERN MICHIGAN UNIVERSITY

Dear Employer:

Recently our office sent you some materials in conjunction with a study of college graduate employment. We have not yet heard from you. We hope you will help us in this project by completing the self-addressed, stamped questionnaire and returning it. Thank you.

Sincerely,

Ray Montagno, Research Assistant

NOTE: Please indicate company name on first page of questionnaire.

WESTERN MICHIGAN UNIVERSITY

OFFICE OF INSTITUTIONAL RESEARCH

KALAMAZOO, MICHIGAN
49001

June 4, 1974

Dear Employer:

Recently a questionnaire on college graduate employment was sent to your office. It was addressed to a person whose name was obtained from Western's Placement Office. We have not as of yet received a reply from your organization.

In the event the original addressee is not presently at your location, I am sending another questionnaire. I would appreciate it if this questionnaire could be forwarded for completion to a person currently involved in campus recruiting. It is hoped the results of this study will improve the employment counseling facilities of our University.

The questionnaire is pre-stamped and pre-addressed. Simply fold and fasten where indicated. I hope you will appreciate the value of this study and decide to participate.

Thank you.

Yours truly,

Ray Montagno

Ray Montagno
Research Assistant

RM:sg

NOTE: Please indicate company name on first page of questionnaire.

Appendix I

Frequency of Response for Student Subgroups on Section II

Question Number	Male			Female		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	59	28	52	41	11	54
2	126	6	7	92	2	12
3	78	31	30	48	23	35
4	51	50	38	35	36	35
5	83	17	39	46	16	44
6	40	62	37	22	41	43
7	65	45	29	41	38	27
8	58	43	38	36	21	49
9	75	50	14	54	30	22
10	43	72	24	30	48	28
11	34	75	30	32	43	31
12	82	19	38	50	20	36
13	76	19	44	47	13	46
14	49	73	17	36	58	12
15	21	87	31	7	89	10
16	47	63	29	26	57	23
17	31	76	32	25	54	27
18	110	20	9	99	4	3
19	37	70	32	25	54	27
20	88	20	31	65	16	25
21	55	32	47	30	37	39

Appendix I (continued)
Frequency of Response for Student Subgroups on Section II

Question Number	Seniors			Juniors		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	53	18	56	47	21	50
2	115	2	10	103	6	9
3	64	22	41	62	32	24
4	41	38	48	45	48	25
5	73	16	38	56	17	45
6	32	57	38	30	46	42
7	58	40	29	48	43	27
8	45	36	46	49	28	41
9	71	38	18	58	42	18
10	40	56	31	33	64	21
11	29	63	35	37	55	26
12	68	18	41	64	21	33
13	66	17	44	57	15	46
14	39	70	18	46	61	11
15	17	88	22	11	88	19
16	37	59	31	36	61	21
17	22	71	34	30	68	20
18	104	15	8	105	9	4
19	28	60	39	34	64	20
20	73	17	37	80	19	19
21	46	32	49	39	42	37

Appendix I (continued)
Frequency of Response for Student Subgroups on Section II

Question Number	Junior Male			Junior Female		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	23	13	19	24	8	31
2	49	4	2	54	2	7
3	33	14	8	29	18	16
4	21	25	9	24	23	16
5	32	6	17	24	11	28
6	17	19	19	13	27	23
7	21	20	14	27	23	13
8	25	15	15	24	13	26
9	24	26	5	34	16	13
10	16	33	6	17	31	15
11	18	26	11	19	29	15
12	32	8	15	32	13	18
13	27	7	21	30	8	25
14	20	29	6	26	32	5
15	5	38	12	6	50	7
16	20	24	11	16	37	10
17	16	28	11	14	40	9
18	47	6	2	58	3	2
19	14	31	10	20	33	10
20	38	8	9	42	11	10
21	19	19	17	20	23	20

Appendix I (continued)
Frequency of Response for Student Subgroups on Section II

Question Number	Senior Male			Senior Female		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	36	15	33	17	3	23
2	77	2	5	38	0	5
3	45	17	22	19	5	19
4	30	25	29	11	13	19
5	51	11	22	22	5	16
6	23	43	18	9	14	20
7	44	25	15	14	15	14
8	33	28	23	12	8	23
9	51	24	9	20	14	9
10	27	39	18	13	17	13
11	16	49	19	13	14	16
12	50	11	23	18	17	18
13	49	12	23	17	5	21
14	29	44	11	10	26	7
15	16	49	19	1	39	3
16	27	39	18	10	20	13
17	15	48	21	7	23	13
18	63	14	7	41	1	1
19	23	39	22	5	21	17
20	50	12	22	23	5	15
21	36	18	30	10	14	19

Appendix I (continued)
Frequency of Response for Student Subgroups on Section II

Question Number	Arts & Sciences			Applied Sciences		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	29	15	33	22	9	19
2	63	4	10	48	0	2
3	41	18	18	31	11	8
4	27	28	22	14	21	15
5	37	10	30	31	8	11
6	19	34	24	14	21	15
7	37	25	15	15	25	10
8	30	16	31	16	18	16
9	36	30	11	27	19	4
10	22	37	18	16	24	10
11	16	38	23	11	30	9
12	36	13	28	30	8	12
13	44	6	27	22	11	17
14	31	35	11	13	33	4
15	6	58	13	3	36	11
16	19	35	23	19	17	14
17	19	40	18	12	29	9
18	64	8	5	41	6	3
19	20	40	17	12	28	10
20	50	13	14	34	4	12
21	28	23	36	23	10	17

Appendix I (continued)
Frequency of Response for Student Subgroups on Section II

Question Number	Business			Education		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	28	11	18	21	4	36
2	53	3	1	54	1	6
3	32	11	14	22	14	25
4	24	18	15	21	19	21
5	33	8	16	28	7	26
6	17	25	15	12	23	26
7	26	21	10	28	12	21
8	24	21	12	24	9	28
9	37	17	3	29	14	18
10	20	32	5	15	27	19
11	20	29	8	19	21	21
12	38	9	10	28	9	24
13	29	9	19	28	6	27
14	21	31	5	20	32	9
15	12	36	9	7	46	8
16	20	35	2	15	33	13
17	9	35	13	12	35	14
18	49	7	1	55	3	3
19	14	29	14	16	27	18
20	35	11	11	34	8	9
21	17	21	19	17	20	24

Appendix J
Frequency of Response for Student Subgroups on Section III

Question Number	Male			Female		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	114	24	1	87	18	1
2	79	57	3	43	60	3
3	89	43	7	60	40	6
4	98	36	5	69	30	7
5	84	21	34	58	12	36
6	113	21	5	84	21	1
7	47	51	41	16	59	31
8	65	37	37	44	23	39
9	83	39	17	61	36	9
10	93	20	26	45	25	36
11	98	31	10	82	15	9
12	35	45	59	25	47	34
13	92	33	14	75	16	15
14	111	21	7	90	11	5
15	26	103	10	16	80	10
16	60	60	19	34	62	10

Appendix J (continued)
Frequency of Response for Student Subgroups on Section III

Question Number	Seniors			Juniors		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	102	24	1	99	18	1
2	64	60	3	58	57	3
3	81	39	7	68	44	6
4	91	32	4	76	34	8
5	70	17	40	72	16	30
6	107	16	4	90	26	2
7	37	55	35	26	55	37
8	51	31	45	58	29	31
9	78	31	18	66	44	8
10	71	21	32	24	24	30
11	83	31	13	97	15	6
12	40	54	33	20	38	60
13	89	25	13	78	23	17
14	106	17	4	95	15	8
15	23	93	11	19	90	9
16	56	59	12	38	63	17

Appendix J (continued)
Frequency of Response for Student Subgroups on Section III

Question Number	Junior Male			Junior Female		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	48	7	0	51	11	1
2	32	21	2	26	36	1
3	34	18	3	34	26	3
4	35	17	3	41	17	5
5	32	10	13	40	6	17
6	43	11	1	47	15	1
7	16	22	17	10	33	20
8	30	15	10	28	14	21
9	34	16	5	32	28	3
10	37	7	11	27	17	19
11	44	8	3	53	7	3
12	7	14	34	13	24	26
13	33	13	9	45	10	8
14	44	7	5	51	8	4
15	11	40	4	8	50	5
16	18	25	12	20	38	5

Appendix J (continued)
Frequency of Response for Student Subgroups on Section III

Question Number	Senior Male			Senior Female		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	66	17	1	36	7	0
2	47	36	1	17	24	2
3	55	25	4	26	14	3
4	63	19	2	28	13	2
5	52	11	21	18	6	19
6	70	10	4	37	6	0
7	31	29	24	6	26	11
8	35	22	37	16	9	18
9	49	23	19	28	8	6
10	56	13	15	18	8	17
11	54	23	7	29	8	6
12	28	31	25	12	23	8
13	59	20	5	30	5	8
14	67	14	3	39	3	1
15	15	63	6	8	30	5
16	42	35	7	14	24	5

Appendix J (continued)
Frequency of Response for Student Subgroups on Section III

Question Number	Arts & Sciences			Applied Sciences		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	63	13	1	42	8	0
2	33	42	2	29	21	0
3	35	40	2	34	14	2
4	53	20	4	35	14	1
5	49	9	19	19	10	21
6	56	17	4	40	10	0
7	15	47	15	18	19	13
8	29	24	24	28	14	8
9	43	23	11	34	11	5
10	36	22	19	26	8	16
11	60	12	5	37	10	3
12	29	16	32	10	24	16
13	42	21	14	37	8	5
14	65	8	4	43	6	1
15	9	62	6	10	39	1
16	35	33	9	17	24	9

Appendix J (continued)
Frequency of Response for Student Subgroups on Section III

Question Number	Business			Education		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	47	10	0	49	11	1
2	40	16	1	20	38	3
3	40	13	4	40	16	5
4	40	16	1	39	16	6
5	43	11	3	31	3	27
6	48	8	1	53	7	1
7	20	15	22	10	29	22
8	28	13	16	24	9	28
9	33	16	8	34	25	2
10	49	4	4	27	11	23
11	38	17	2	45	7	9
12	13	23	21	8	29	24
13	38	16	3	50	3	8
14	39	14	4	54	4	3
15	13	40	4	10	42	9
16	23	30	4	19	35	7

Appendix K
Rank-Ordering of Questions in Section IV of Student Questionnaire

Question #1 - Where are most jobs available?

Area	Student Subgroups											
	Seniors	Juniors	Male	Female	Jr Male	Jr Female	Sr Male	Sr Female	Arts & Sciences	Applied Sciences	Bus	Educ
Accounting	1	1	1	3	2	2	1	5	3	5	1	2
Banks	4	10	9	10	11	9.5	8	9	10	10.5	2	11
Clinics	10	8	10	6	9	5	11	8	7	10.5	10	9
Educational institutions	11	11	11	11	10	11	10	11	11	9	11	10
Engineering firms	8	5	6	8	4.5	7	5	10	8	2	5	3
Government	5	4	4	2	3	3	6	2	1	4	7	4.5
Hospitals	9	3	8	1	4.5	1	9	1	4	3	9	1
Insurance	7	9	7	9	8	9.5	7	4	9	8	8	4.5
Manufacturing	6	2	2	5	1	4	4	7	2	1	6	6
Chain stores	3	6	5	4	6	6	3	3	6	6	3	8
Sales	2	7	3	7	7	8	2	6	5	7	4	7

Appendix K (continued)
Rank-Ordering of Questions in Section IV of Student Questionnaire

Question #2 - Where is specific training most necessary?

Area	Student Subgroups											
	Seniors	Juniors	Male	Female	Jr Male	Jr Female	Sr Male	Sr Female	Arts & Sciences	Applied Sciences	Bus	Educ
Accounting	1	3	1	3	3	3	1	3	1	3	1	4
Banks	6	8	7	7	9	8	6	7	8	7	5	7
Clinics	5	5	5	5	5	5	5	5	4	6	6	5
Educational institutions	4	4	4	4	4	4	4	2	5	4	4	2
Engineering firms	2	2	2	2	2	2	2	4	3	1	2	3
Government	7	6	8	6	6.5	6	8	6	6	9	7	6
Hospitals	3	1	3	1	1	1	3	1	2	2	3	1
Insurance	9	9	9	9	6.5	11	10	8	9	8	10	8
Manufacturing	8	7	6	8	8	7	7	9.5	7	5	9	9.5
Chain stores	10	11	11	11	11	10	11	11	11	10.5	11	11
Sales	11	10	10	10	10	9	9	9.5	10	10.5	8	9.5

Appendix K (continued)
Rank-Ordering of Questions in Section IV of Student Questionnaire

Question #3 - Where would you like to work?

Area	Student Subgroups											
	Seniors	Juniors	Male	Female	Jr Male	Jr Female	Sr Male	Sr Female	Arts & Sciences	Applied Sciences	Bus	Educ
Accounting	10	10	8	7	9	9	8	7	7	10	5	8
Banks	5	5	6	5	7.5	5	7	5	5	8.5	5	4
Clinics	7	4	10	2	7.5	4	10	2	4	8.5	11	3
Educational institutions	1	1	3	1	3	1	2	1	1	4	6	1
Engineering firms	9	7	5	10	4	7	5	11	11	1	9.5	7
Government	2	2	1	4	1	3	1	4	2	3	2	4
Hospitals	8	3	9	3	5.5	2	9	3	3	7	9.5	2
Insurance	11	11	11	11	10	10.5	11	10	7	11	8	10
Manufacturing	3	6	2	9	2	10.5	3	8.5	7	2	1	11
Chain stores	6	9	7	6	11	6	6	6	10	6	3	6
Sales	4	8	4	8	5.5	8	4	8.5	9	5	7	9

Appendix K (continued)
Rank-Ordering of Questions in Section IV of Student Questionnaire

Question #4 - Rank in order of importance to employers the following skill areas.

Skill Area	Student Subgroups											
	Seniors	Juniors	Male	Females	Jr Male	Jr Female	Sr Male	Sr Female	Arts & Sciences	Applied Sciences	Bus	Educ
Technically oriented	2	1	1	3	1	1	1	4	3	1	3	3
People oriented	4	4	4	2	4	2.5	4	1	4	4	4	2
General quantitative	5	5	5	5	5	5	5	5	5	5	5	5
Communications	1	3	3	1	3	2.5	3	2	1	3	2	1
Leadership	3	2	2	4	2	4	2	3	2	2	1	4

Appendix L
Frequency of Response for Employer Subgroups on Section II

Question Number	Manufacturers			Nonmanufacturers		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	21	7	2	21	12	3
2	29	1	0	35	1	0
3	26	4	0	25	9	2
4	9	17	4	6	21	9
5	19	6	5	24	10	2
6	8	18	4	7	25	4
7	4	25	1	6	30	0
8	7	21	2	7	28	1
9	20	10	0	18	15	3
10	3	26	1	2	33	1
11	3	24	3	2	27	7
12	28	1	1	34	0	2
13	19	10	1	12	18	6
14	0	30	0	0	36	0
15	3	26	1	3	33	0
16	6	21	3	0	30	6
17	5	23	2	9	22	5
18	21	8	1	18	13	5
19	12	16	2	9	19	8
20	8	15	7	13	15	8
21	9	19	2	8	20	8

Appendix L (continued)
Frequency of Response for Employer Subgroups on Section II

Question Number	Manufacturers			Nonmanufacturers		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
22	1	27	2	3	22	11
23	26	4	0	30	6	0
24	1	21	8	11	11	14
25	23	0	7	26	2	8
26	20	1	9	20	0	16

Appendix M
Frequency of Response for Employer Subgroups on Section III

Question Number	Manufacturers			Nonmanufacturers		
	Agree	Disagree	No Opinion	Agree	Disagree	No Opinion
1	26	1	3	27	9	0
2	18	11	1	20	15	1
3	20	8	2	24	12	0
4	26	4	0	26	10	0
5	27	3	0	32	2	2
6	24	4	2	24	10	2
7	17	7	6	21	7	8
8	26	4	0	19	4	13
9	20	10	0	15	19	2
10	29	1	0	33	0	3
11	13	13	4	7	22	7
12	29	1	0	32	4	0
13	4	25	1	6	29	1
14	15	11	4	25	7	4
15	14	13	3	16	16	4

Appendix N
Rank-Order of Questions in Section IV of Employer Questionnaire

Area	Question #1 Where are most jobs available?		Question #2 Where is specific training most necessary?	
	Manu-facturers	Nonmanu-facturers	Manu-facturers	Nonmanu-facturers
Accounting	3.5	1	2	1
Banks	7	6	5	6
Clinics	10	11	7.5	4
Educational institutions	11	10	4	3
Engineering firms	2	4	1	2
Government	3.5	3	10	10
Hospitals	9	8	6	5
Insurance	6	5	9	9
Manufacturing	1	2	3	7
Chain stores	8	9	11	11
Sales	5	7	7.5	8

Appendix N (continued)
Rank-Order of Questions in Section IV of Employer Questionnaire

Question # 3 - Skills desired by employers.		
Skill Area	Manufacturers	Nonmanufacturers
Technically oriented	1	2
People oriented	4	3
General quantitative	5	5
Communication skills	3	4
Leadership skills	2	1

Question #4 - Agency to gather and disseminate job information.		
Agency	Manufacturers	Nonmanufacturers
Placement Office	1	1
Counseling Center	2	2
Individual college	5	5
Department within college	3	3
Individual faculty members	4	4