SELECTED FACTORS INFLUENCING INDUSTRIAL EDUCATION AND TRAINING PROGRAM SELECTION BY JORDANIAN STUDENTS AND THEIR CHARACTERISTICS AND ASPIRATIONS

By

AHMAD MOHAMMAD ATWAN

Bachelor of Engineering
American University of Beirut
Beirut, Lebanon
1963

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1983

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of the Oklahoma State University
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Thesis Approved:

Thesis Adviser

Dean of the Graduate College

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INTRODUCTION

Background Information

Jordan is a nation with few natural resources. Although it is not a wealthy state, Jordan has a high regard for education and devotes a substantial part of its resources to education and training. Consequently, Jordan has achieved a significant economic growth over the past decade (UNESCO, 1980) and in spite of limited exploitation of agricultural and mineral resources, the talents of the people have raised Gross Domestic Product from $525 million in 1971 to $1.8 billion in 1979 (Gubser, 1983).

Jordan, a nation of the Middle East, is considered as one of the cradles of civilizations. It is located at the crossroads of three continents. Its geographic proximity and common culture with Oil-Rich Arab States (ORAS) have given Jordan an invaluable opportunity to contribute to the advancement of ORAS and of itself.

The economic boom in the neighboring ORAS, the expansion of the military and civil services in the early 1970s, and the greater industrialization and construction boom in the mid-1970s have had a dramatic effect on employment in Jordan. Unemployment, amounting to 14 percent in the beginning of the 1970s, decreased to two percent by 1975, and turned to a widespread shortage of skilled manpower at all levels in the late 1970s (Nyrop, 1980; UNESCO, 1980).

The major cause of this labor shortage was the migration of Jordanian workers to higher paying jobs in ORAS and other countries throughout the world. Jordan's work force was better educated and more skilled than most of its Arab neighbors. This drain of managers and skilled personnel in a nation of less than three million hampered operations of existing businesses and threatened economic development plans (Nyrop, 1980).

Therefore to meet Jordan's present and future development needs, additional vocational and technical education programs were instituted. But training new technicians and workers frequently resulted in their departure as soon as they acquired a marketable skill. The migration of these workers caused a substantial rise in wages and exerted much pressure on vocational and training facilities which placed the country in a state of constant flux in the educational and training field.

To solve the labor shortage problem, foreign labor was imported. In 1978 there were about 60,000 expatriate workers. There were over 75,000 in 1979, most of them from Egypt, Syria, and Pakistan (Nyrop, 1980). The majority of this imported labor force was at the unskilled level. Of these, about 20,000 were agricultural workers (Gubser, 1983). This importation of labor led to more opportunity for Jordan's skilled work force to migrate to ORAS. Migration contributes positively to the national economy because the remittances become a major support for the balance of payment. In 1982, remittances from the 305,000 Jordanians working abroad reached 365 MJD ($1043 millions), while the remittances sent back by the 120,000 foreign workers in Jordan to their families abroad were about 65 MJD ($186 millions) (Jordan Information Bureau, 1983).

The development of Jordan's human resources is of special importance

for the country's future. The rapid growth in the light manufacturing industry and the maintenance of Jordan's role as a provider of skilled manpower and services within the region require an appropriate education and training strategy. The government's long-term effort is toward expansion of the role of the productive sector in comparison with service sectors. This tendency would result in growth of demand for skilled-technical occupations (UNESCO, 1980).

This planned growth led to an increasing recognition among the country's planners that the availability of skilled workers or the capability to train them is the most significant factor in an effective national or regional economic development policy. Moreover the ability to adapt to changing labor markets and student interests is a key area of importance to the future growth and support of education in general and industrial education and training in particular.

His Majesty, King Hussien, addressing the Conference: Educational Process in a Developing Jordanian Society, said:

> It is time now to redirect the educational policy towards a practical and useful education for our society, and to stop the rush towards theoretical education which is not related to our society's needs and interests. Thousands of our youth are enrolling in secondary education and they are seeking acceptance in universities in our country and abroad irrespective of their standards and without any guidance or counseling from the educational establishment toward the correct choice of applied, vocational and technical education in the light of our society's needs and the students' interests.
>
> Our society is in need of skilled workers, craftsmen, technicians as well as professionals... We have to face this great responsibility which is directing education to cope with our society's needs and with the planning of our well balanced social and economic development (Abdulhamied, 1980, p. 20).

The Minister of Education, addressing the 37th International Education Conference in Geneve about new educational strategies in

Jordan, said:

> Diversifying secondary education programs by introducing comprehensive education system which prepares students academically, vocationally and practically; expanding in vocational education: industrial, business, agricultural, nursing and postal education; and expanding in trade training centers are considered as the educational system's response to the individual's and society's needs (Ministry of Education [MOE], 1979, p. 15).

Ghanim (1981) said that one of the objectives of secondary education in the Arab World is to prepare students for life. One of the strategies of education in the Arab World is to consider as educational objectives the preparation of students for work and to meet the needs of Arab Societies for the skilled manpower which is necessary to develop these societies (ALESCO, 1979).

Industrial Education and Training

Since the application of scientific and technical knowledge to useful social purposes requires an educated labor force, and human resources, together with land and capital, constitute the main factors in any nation's economic development and progress, industrial education and training is invaluable to society (see Appendix A).

Industrial education and training is part of vocational education at the secondary level. It is intended to prepare persons for gainful employment in occupations requiring less than technician (post-secondary) education level. This preparation is essential particularly for persons who plan to enter occupations where performance and success depend upon mastery of manipulative skills and technical knowledge.

Jordanians have a long history of involvement in industrial education and training. Salizian Industrial School, established in Bethlehem in 1863, is considered the first industrial school in Palestine

and Trans Jordan. In 1922 the Islamic Orphanage School was founded in Jerusalem, followed by Haifa Industrial School during the British Mandate of Palestine (Hashemite Kingdom of Jordan [HKJ], 1969).

In the East Bank of Jordan the first industrial school was established in Amman by Law No. 75 in 1924 (MOE, 1980). This school was renewed in 1953 with financial support from the United States. It started with 82 students in five workshops (Atwan, 1977). In 1960 another industrial school was established in Irbid with the technical assistance of the Federal Republic of Germany. This school started with 31 students in four workshops (MOE, 1980). Jordan's Law of Education No. 16 of 1964 encouraged skill training, equal opportunity, and fulfillment of individual needs and aspirations. Article No. 4, item No. 7 stated that:

> Basic skills of the individual should be developed by the availability of equal opportunity of educational programs which goes with individuals needs and aspirations on one hand, and which serves the development of economic needs of the nation (MOE, 1980, p. 13).

At the turn of the 1970s industrial education received stronger support from the government by expanding the system to include three major educational categories: (a) industrial secondary schools, (b) trade training centers, and (c) apprenticeship training centers (see Appendix B).

The industrial secondary schools (ISS) were planned so that programs and enrollment would be increased. At that time in the East Bank of Jordan there were only two industrial schools with a total enrollment of 699 students in six programs. By 1982/83 there were six schools with total enrollment of 3405 students in 20 programs (MOE, 1981b) and there were 14 other schools under construction.

The main aim of the industrial secondary schools is to prepare students for craftsman-level jobs in various industrial specializations.

The curriculum includes cultural subjects (14% of total teaching time), scientific (18%), technical (20%), and practical training (48%). Table I shows the list of courses for ISS. All students spend the first year in basic training, and visiting other workshops. The second and third years, including summer training, are spent in one area of program specialization from among the programs listed in Table II. At the end of the three years the student can sit for the General Secondary Education Certificate Examination (GSECE). Those who score high are eligible to continue their higher studies in a related technical field (Atwan, 1977; MOE, 1981a; UNESCO, 1980).

In an effort to support industrial education, the Ministry of Education introduced a new method of training, the trade training centers (TTC). Two TTCs were started in 1971 as a second shift in the Amman and Irbid industrial schools. The total enrollment was 62 students. In 1981/82 MOE had 20 centers with total enrollment of 1777 students in 19 programs (MOE, 1981b).

The United Nations Relief and Work Agency (UNRWA) and UNESCO have been responsible for provision of educational programs for the Palestine Arab refugee communities since 1950. UNESCO assumed technical responsibility for programs, while UNRWA was administratively responsible for their implementation. Wadi Sir Training Center was established in 1960 and about 608 trainees enrolled as TTC students similar to those at training centers in the Ministry of Education (MOE, 1981b; UNESCO, 1980).

The main objective of trade training centers is to prepare trainees for skilled worker level jobs in public and private sector enterprises. This curriculum extends over two years, and includes cultural subjects (8%), technical subjects (17%), and practical training (75%) (Atwan,

TABLE I

STUDY PLAN FOR A THREE-YEAR INDUSTRIAL SECONDARY SCHOOL (ISS)

Subjects	Weekly Periods for Grade Levels		
A. General Education	10	11	12
1. Islamic Culture	1	1	1
2. Arabic Language	1	1	1
3. Foreign Language (English).	2	2	2
4. Safety & Industrial Organization.	1	1	1
5. Palestinian Question	1	-	-
6. Arab Society	-	1	-
7. Physical Education	1	1	1
Total	7	7	6
B. Basic Sciences			
1. Mathematics	3	3	3
2. Physics	3	3	3
3. Industrial Chemistry	1	1	1
Total	7	7	7
C. Vocational Subjects			
1. Technical Drawing	4	4	3
2. Trade Technology & Workshop Training			
a - Trade Technology	3	3	3
b - Workshop Practice	19	19	19
Total	26	26	25
Grand Total	40	40	38

TABLE II

Students in Industrial Secondary Schools (ISS). Scholastic Year 1983/84. Duration = 3 years (Grades 10,11,12)

Governorate		Amman				Irbid		Karak	Ma'an	Total
School		Amman	Sweileh	Zarqa	Madaba	Irbid	Mafraq	Rabba	Aqaba	
Program	Grade									
1.Basic Training	10	466	326	431	122	468	125	29	98	2065
2.Electrical	11	43	22	44		50	15		13	187
Utilization	12	46	15	41		48	16		15	181
3.Electrical	11			25						25
Generation	12			20						20
4.Electrical	11			25						25
Transmission	12			16						16
5.Radio & TV	11	36		13		15				64
	12	32		9		30				71
6.Telecommunication	11	42								42
	12	32								32
7.Automechanics	11	41	23	42		50	16		16	188
	12	42	15	36		46	16		16	171
8.Dieselmechanics	11			12		47				59
	12			12		47				59
9.Agricultural	11							21		21
Machinary	12							15		15
10.Autobody	11		23							23
Repair	12		12							12
11.Plant Maintenance	11								16	16
	12								19	19
12.Machining	11	26				40				66
	12	24				27				51
13.Engine	11		18							18
Grinding	12		13							13
14.Welding	11	35	22	31		50	14			152
	12	18	9	22		44	5			98
15.Instrumentation	11								10	10
	12								10	10
16.Refregeration	11	40	24	49					17	130
	12	43	16	38					18	115
17.Central Heating	11	42	23	45		50	10			170
	12	45	16	29		49	13			152
18.Carpentary	11	38	25	30		41	20			154
	12	30	12	30		46	9			127
19.Upholstry	11					17				17
	12					21				21
20.Building &	11		21			11				32
Shutering	12		8			9				17
21.Plastering	11		19			14				33
& Tiling	12		9			19				29
Total		1121	671	1000	122	1239	259	65	248	4725

1977; UNESCO, 1980). Programs available are shown in Table III.

In 1973 MOE started a third type of training, the apprenticeship training centers (ATC). Later apprenticeship responsibility was transferred from the MOE to the Vocational Training Corporation (VTC) which was established in 1976 by Law No. 35 as an autonomus body to contribute towards fulfillment of the five year development plan (1976-1980) in the field of manpower development (VTC, 1982). Apprentices attended on the job training in industrial establishments. The trainees usually get pocket money during their training period (Atwan, 1977; UNESCO, 1980). The main objective in the vocational field is to train manpower up to the level of skilled worker through apprenticeship schemes by using training facilities provided by industrial establishments, and temporarily by the Ministry of Education. VTC enrolled 1794 trainees in 1982 (MOE, 1981b).

The apprenticeship training in the Vocational Training Corporation covers both training on-the-job, and formal classroom and basic training. Practical training is about 80% of the total teaching time with production bias. Programs available in apprenticeship training centers are shown in Table IV. The apprenticeship period extends from two to three years divided as follows:

1. Basic training for six weeks takes place in the training facilities of VTC and MOE.
2. Specialized in-plant training.
3. Supervised work during the third year.

Table V shows the list of courses for both the TTCs and ATCs. For more details about the educational system in Jordan see Appendix C.

To summarize, as part of vocational education, industrial education

TABLE III

STUDENTS IN TRADE TRAINING CENTERS(TTC).SCHOLASTIC YEAR 1983/84. Duration = 2 YEARS (Grades 10,11)

Governerate		Amman							Irbid					
Center		Marka	Ashrafia	Sahab	WadiSir	Russiefa	Sweileh	Wadisir(UN)	Sarieh	Kryma	N.Shona	AliKholqi	Maath	Ibnhazm
Program	Grade													
1.Electrical	10	35	25		22	8	13	32		18		15		11
Utilization	11	34	24		17	9	17	31				6		
2.Auto	10							16						
Electrican	11							16						
3.Radio & TV	10							16						
	11							17						
4.Auto	10	34	30				19	16						
Mechanic	11	29	24				15	16						
5.Agricultural	10													
Machinary	11													
6.Auto Body	10						17	17						
Repair	11						15	15						
7.Diesel	10							32						
Mechanic	11							16						
8.Machining	10	30						24						
	11	32						47						
9.Engine	10						12							
Grinding	11						16							
10.Welding	10	22	28	8			10	15						
	11	19	18	8			14	16						
11.Refreg-	10	36	31				16	16						
eration	11	36	23				14	16						
12.Central	10		31			8	18	17	8		15			
Heating	11		27			12	13		11					
13.Carpentry	10	22	31	8			16	32					14	6
	11	18	21	6			14	15					4	1
14.Office	10							16				4		
Machines	11							16				4		
15.Glass Ware	10	10												
16.Building &	10	11					9	18						
Shuttering	11	9					5	26						
17.Plastering	10	12					14	16						
& Tiling	11	9					2	12						
Total	10	212	176	16	22	16	144	283	8	18	15	19	14	17
	11	186	137	14	17	21	125	259	11			10	4	1
Grand Total		584	313	30	39	37	269	542	19	18	15	29	28	18

TABLE III " Continued "

Governerate		Irbid				Balqa		Karak				Ma'an		Total
Center		Shajara	Jerash	Anjara	Mafraq	Suliman Nabulsi	S.Shona	Marj	Qasr	Aie	Tafiela	Ma'an	Quara	
Program	Grade													
1.Electrical	10		31	10	10	8		12	6		19	13	17	305
Utilization	11		16	5	11	12		17	6		8	19	15	247
2.Auto	10													16
Electrican	11													16
3.Radio & TV	10													16
	11													17
4.Auto	10													99
Mechanic	11													84
5.Agricultural	10						15							15
Machinary	11	1					15							16
6.Auto Body	10													34
Repair	11													30
7.Diesel	10													32
Mechanic	11													16
8.Machining	10													54
	11													79
9.Engine	10													12
Grinding	11													16
10.Welding	10	3		10		7	15	8	5	6				137
	11	4		4		7	15	10	5	3				123
11.Refreg-	10													99
eration	11													89
12.Central	10		25		11	8								141
Heating	11		17		10	15						7		112
13.Carpentry	10		22							17				168
	11		8	2						6				95
14.Office	10													20
Machines	11													20
15.Glass Ware	10													10
16.Building &	10													38
Shuttering	11													40
17.Plastering	10													42
& Tiling	11													23
Total	10	4	78	20	21	16	30	20	11	23	19	13	17	1238
	11	4	41	11	21	27	30	27	11	9	8	26	15	1031
Grand Total		8	119	31	42	43	60	47	22	32	27	39	32	2261

TABLE IV

STUDENTS IN APPRENTICESHIP TRAINING CENTERS (ATC).SCHOLASTIC YEAR 1983/84.DURATION =3 YEARS (GRADES 10,11,12)

Goverrnorate		Amman			Balqa			Irbid	Ma'an		Karak	Total
Center		Ashrafieh	WadiSir	Yajouz	Hashimia	AinBasha	Ma'adi	Hakama	Aqaba	Ma'an	Hasa	
Program	Grade											
1.Electrical Utiliza-tion	10	17		34	23	37		49				160
	11	37						17				51
	12	09										9
2.Electrical Generation	10				33							33
	11				30							30
	12				25							25
3.Electrical Transmission	10	28	32					26				86
	11	34	32					20				86
	12	26	30					18				74
4.Auto Electrician	10	17				18						35
5.Auto Mechanios	10	36	21	79	64	34	16	74	15			339
	11	19	18		26	46	20	52				181
	12	48	21		7	24		20				120
6.Diesel Mechanics	10	49	20	26						12		107
	11	68	15								19	102
	12										16	16
7.Auto Body Repair	10		17			20						37
8.Plant Maintenance	10			20	46	11					19	96
	11				27							27
	12				25						15	40
9.Machining	10							35				35
10.Welding	10	50	52	79	62	41	17	83	11			395
	11	44	40	92	44	52		40	12			324
	12	40	30	70		30		19				189
11.Central Heating	10	31	30	34	54	32		75				256
	11	29	30	17	31	30		32				169
	12	10	21	10	13	23						77
12.Refreger-ation	10			26		24						50
13.Refinary Operation	10				21							21
	11				15							15
	12				12							12
14.Carpentry	10	47	30	86		32		71				266
	11	20	22	34		25	18	44				163
	12	14	14	18		10		9				65
15.Building & Shuttering	10					10		31				41
	11							25				25
16.Tiling & Plastering	10					15		50				65
Total		670	475	625	558	514	71	790	38	12	69	3822

TABLE V

STUDY PLAN FOR A TWO-YEAR TRADE TRAINING CENTER (TTC) AND **APPRENTICESHIP** TRAINING CENTER (ATC)

Subjects	Weeky Periods For Grade Levels 10	12
1.General Education [Islamic Culture, Arabic Language,& Arab Society]	2	2
2.English Language	1	1
3.General Science	2	2
Total	5	5
4.Vocational Modules		
- Workshop Practice	24	24
- Trade Technology	4	4
- Technical Drawing	3	3
- Industrial Safety and Hygien.	1	1
Total	32	32
Grand Total	37	37

and training programs are provided in Jordan at the secondary level (post-compulsory). These programs are differentiated by skill level, by occupation (program), and by the degree to which they are integrated with actual employment conditions (UNESCO, 1980).

The skill levels within industrial education are differentiated between the "Craftsman" level, which is provided by the Ministry of Education industrial secondary schools for a three year period, and the "skilled worker" level which is provided in two-year trade training centers in MOE and apprenticeship training centers in VTC as well as by UNRWA and the military.

The main occupational differences are between program specializations which are more popular, for example, auto mechanics, electrical, plumbing and central heating; and other less popular program specializations, for example, construction occupations, woodwork, and others (UNESCO, 1980).

Training programs are differented by the degree to which education or training is integrated with actual employment conditions. In the case of apprenticeship training programs of VTC, students receive pocket money and possible employment. Students receive work opportunities during and after training under the military. In MOE programs and UNRAW students depend on themselves to find jobs after graduation.

Need for the Study

Industrial education and training is one of the major suppliers of skilled manpower for industry in Jordan. This type of vocational education is mainly specialized in manufacturing and industrial trades for male students, and is provided mainly by MOE, VTC, and the military.

Industrial secondary schools, trade training centers in MOE, apprenticeship training centers in VTC, and other training centers in UNRWA and in the military assume the responsibility of serving students by offering quality vocational training in various areas of industrial trades which serve industry and development in Jordan.

An important decision about career choices for most Jordanians will be made at the end of compulsory education, when students are allocated to the various kinds of education and training available at the secondary level. Education in the ninth grade, as Super and Overstreet (1960) have stated, should be so organized as to make available experiences which foster a planful approach to developmental tasks, to arouse awareness of the need to make pre-occupational and occupational choices, and to orient adolescents to the kind and sequences of choices which they will be called upon to make and to the factors which they should consider in making these choices. Career decisions, if they are to be realistic, require a great deal of information. Given the great variety of programs, levels, and training environments available to Jordanian students, the question arises as to why students select one program, one level, and one training environment over the others.

Knowledge of reasons behind a student's selection of a certain program at a certain level under a certain environment is of vital importance to counseling services and planning authorities. Planning for more effective and more efficient industrial education and training programs should take into consideration the student population to be served. Allen (1974) states that:

> In vocational education, the occupational goal of the student should become the center of the instructional program, and the learning experiences necessary to prepare for this goal should become the basis for learning activity.... The specific

> learning goals for each student should be based upon an understanding of wide differences in personalities, interests, backgrounds and abilities (pp. 126-127).

One of the most important decisions in life is the selection of an occupation or career. Philips (1968) reports that what one chooses for his life's work is a decision of lifetime importance. One aspect which must be considered in the process of career choice is the training required for entry into and successful participation in the occupation. For those students choosing an occupation requiring industrial education and training prior to employment in the occupation, an important subsidiary decision involves the choice of the occupation itself, the level of training, and the environment in which training takes place.

As enrollment in industrial education and training in Jordan continues to grow, the need for information about students served by these programs is essential. The pressures to increase enrollment and the limited financial resources, coupled with the goal to maximize human resource development, point up the need for effective educational planning. Finally, educational programs must be planned to fit the particular talents and needs of students attracted to a program. Educational planning should begin with a consideration of the students to be served (Philips, 1968). Persons who are responsible for planning, evaluating, and modifying occupational programs should have considerable knowledge of the student's interests and plans as they relate to occupational opportunities.

The problem of planning an effective system of vocational education and training, and of providing accurate information for use by students, parents, and counselors appeared to justify the need for a study to analyze the characteristics of students, and the factors affecting

selection of programs in which they have enrolled at different types of institutions (Philips, 1968).

It was expected that the results of this study would be useful to educators, parents, and counselors in advising students into areas consistent with their occupational aspirations. Moreover, it was expected also that this study would provide information which would be useful in the design of additional research in this area of vocational education.

With the wide expansion of industrial education and training, the need is greater than ever before to assess student characteristics, needs, and aspirations. Detailed knowledge of the demographic, socioeconomic, and academic characteristics of the enrollees, and factors affecting their vocational choices is of utmost importance to planners at the MOE and other government agencies dealing with education and training.

Statement of the Problem

The generally accepted purpose of vocational education is to serve the needs of students in their occupational choices and their future aspirations. In spite of the general expansion in industrial education and training in Jordan at the secondary level, little is known about the characteristics of students enrolling in these programs, or about the factors influencing their choices of programs in industrial schools and training centers.

Purpose of the Study

The primary purpose of this study was to determine selected factors influencing students in the selection of their programs in industrial

education and training in Jordan.

A secondary purpose was to identify such background characteristics as scholastic standing, socioeconomic background, education, and aspirations and expectations of selected students in specific programs.

Objectives of the Study

The following objectives were formulated to achieve the purpose of this study:

1. To determine which people influence a student's decision to select his program.
2. To determine which sources of information influence a student's decision to select his program.
3. To determine which economic factors influence a student's decision to select his program.
4. To determine which personal and general factors influence a student's decision to select his program.
5. To determine the general characteristics of students enrolling in programs of industrial education and training.
6. To determine the aspirations and expectations of students enrolling in programs of industrial education and training.

Assumptions

For the purpose of this study, it was assumed that respondent students understood the aim of the study and reacted accordingly, and that their responses were honest expressions of their opinions on why they decided to attend the program they were enrolling.

Scope of the Study

This study was limited to male students enrolled in selected programs in industrial education and training in Jordan. Stratified sampling was used to stratify the industrial education and training delivery systems into:

1. Industrial Secondary Schools in the Ministry of Education,
2. Trade Training Centers in the MOE and UNRWA,
3. Apprenticeship Training Centers in VTC, and
4. Trade Training Centers in the military.

Cluster sampling was used to divide these programs into electrical, car mechanics, climatization, metal work, wood work, and construction clusters. Individual schools and centers were randomly chosen and finally were electrical utilization, auto mechanics, central heating, welding, carpentry, and building and shuttering.

This study was not meant to answer questions concerning what happens to students during or after their training. These concerns are beyond the scope of this study.

Limitations of the Study

The following limitations of the study were recognized by the investigator:

1. The implications of this study may not be applicable to other programs and/or other types of vocational education.
2. The characteristics of students investigated in this study may not be considered a complete profile of students in industrial education and training and/or other types of vocational education.

CHAPTER II

REVIEW OF LITERATURE

Introduction

This chapter reviews the literature related to students' selection of their occupations, theoretical perspectived of occupational choice, major theories of Vocational development and choice, characteristics of students in industrial education and training, and related studies in this field.

Today, youth are living in a society undergoing very rapid changes in nearly all aspects of life. Contemporary youth are confronted with an ever-increasing array of opportunities from which they might choose, and find themselves with little information about the general nature of the world of work, and much less knowledge about specific job areas or the notion of planning a career. Consequently they are faced with a problem when planning their careers and choosing their vocations (Burck, 1975).

Moreover youth know little about themselves as people, their feelings, preferences, or an understanding of their behavior. They are eager to become aware of their personal characteristics and attributes, sort them out, and relate them to their career progression. Choosing a vocation has not been as complicated as it is at the present time (Burck, 1975).

In recent years, theorists have conceptualized the dynamics of human behavior and personality change in relation to career development.

Hollard, Roe, Super, Tiedeman and others have provided rich theoretical explanations of the crucial importance of certain personality constructs and dimensions as influences of career development. Self-concept, self-understanding, attitudes, values, life stages, developmental tasks, and identity are some of these constructs. Other traditional notions of career determinants, like interests, aptitudes, abilities and work experience should also be taken into consideration (Burck, 1975).

According to Super (1957), in choosing an occupation, one is not merely choosing a way of earning a living, one is also choosing a way of life. Jordaan and Heyde (1979) reported that occupation is the principal source of social status in our society, an important means of satisfying personal interests, abilities and values, and a major determinant of life style. Jordaan and Heyde (1979) stated that:

> The vocational possibilities young people are aware of and prepared to consider, their readiness to choose among them, and the determinants and outcomes of their aspirations and choices are, therefore, matters of considerable importance to educators and counselors particularly since evidence is mounting that adolescent goals, even in the last year of high school, are often poorly conceived and at variance with later work histories (p. 2).

Persons may differ in regard to the attributes of sex, age, height, and so on through many attributes. Occupations, too, are distinguished from one another in terms of requirements, socioeconomic status, working conditions, and so on (Woelfel, 1975).

Since the second World War, society has changed drastically, and this change occurs at such a rapid rate that it is very difficult for our youth to adjust. Such change affects every facet of life: education, government, family, religion, peer groups, and business and industry. These changes have serious implications for counseling and facilitating career development and choosing vocations for youth (Burck, 1975).

Career development and access to work are based on knowledge, skills, and attitudes which can be fostered rather than left to chance (Herr and Cramer, 1979). Herr and Cramer (1979) quoted Drucker as saying:

> The problem today is not the lack of choice, but the abundance thereof. There are so many choices, so many opportunities, so many directions that they bewilder and distract the young people. No sooner have they shown a passing interest in this or that area than they are encouraged to make it their life's career (p. 68).

The following trends have some implications for youth career planning (Burck, 1975):

- Productivity is rising rapidly and continues to rise.
- Workers tend to enter work in large corporations as employees instead of independent workers.
- Jobs are steadily shifting from unskilled, semiskilled, and goods-producing types to technical, professional & service-type occupations.
- Proportions of women workers in the work force arae rising.

In recent years the term career development has replaced the term occupational choice as educators have realized that work-related decisions are not the product of a few months or even a few years of exploration and reflection. Career development is a lifelong process which cannot be separated from the physical, intellectual and emotional growth of the individual (Seligman, 1980).

Career development is a process which encompasses the total life span and includes all of an individual's, roles and positions. It includes not only paid employment, but also use of leisure time, volunteer work and time spent on education (Seligman, 1980).

Career planning is not just a decision to enter a particular line of

work; it reflects an individual's accumulated experience and has a profound effect on all aspects of a person's life. Occupational choices are really life style choices (Seligman, 1980).

To reduce ambiguity of terms used, Seligman (1980) gave the following definitions:

> Career: A sequence of roles or positions including work, leisure, and educational pursuits. It may encompass a number of occupations, vocations, or positions.
>
> Occupation/Vocation: A definable work activity found in numerous and varied settings.
>
> Job: A group of related or similar positions in a particular place of employment.
>
> Position: Group of tasks, duties, or activities performed by one person (p. 2).

According to Seligman (1980):

> Career planning is commonly a process of narrowing one's goals and options, of first determining the level of aspirations and its accompanying life style, then selecting the field of interest, and finally selecting the specific occupation (p. 4).

Usually the choice of an occupation has a great effect on the overall happiness of most people and may determine whether they will regard themselves as successes or failures.

Seligman (1980) said that Menninger saw work as the most important source of an individual's identity. Menninger believed that work provides a framework for self-knowledge and the opportunity to earn approval, develop relationships and acquire a sense of competence and importance.

Super (1957) perceived work as satisfying three major needs: human relations needs (e.g., recognition, independence, status), activity needs (e.g., stimulation, creativity, skill utilization), and livelihood needs (e.g., security, compensation).

Work means different things to different people. We work for

several reasons. Some of us work for the salary, some for status, and some for a cause we value or a role we like to play. Greene (1982) reported that Freidman and Havighurst have identified five roles that work serves in people's lives. These are:

1. Income - Maintaining a minimum sustenance level and achieving some higher standard of living.

2. Expenditure of Time and Energy - A means for something to do or a way of passing time.

3. Identity and Status - A source of self-respect and a way of achieving recognition from others.

4. Association - A way of having friendship, peer group relations, and authority relationships.

5. A Source of Meaning of Life - A way of obtaining purpose and meaning in life through service to others, creativity, self-expression, and having new experiences (p. 4).

In choosing a career, one should be aware of the fact that we live in an age of choice and of change. There are hundreds of careers to choose from. A key to successful career selection involves knowing yourself well enough to evaluate your real talents, interests, and needs.

Career is the most important single factor operating in peoples' lives both physiologically and psychologically. Past experiences usually contain clues that can be useful in under-standing the present and planning for the future. Life history is a good source of data to begin the self-assessment phase of the career choice. Actually one acquires the potential for certain types of abilities genetically. These potentials are then either developed through life experiences or remain dormant (Greene, 1982).

Occupational Choice

Occupational choice, as most theorists say, can be typified as either

an accidental or developmental approach (Woelfel, 1975). In the former, a person's decision to enter an occupation is seen as a non-rational occurrence (Miller and Form, 1951). This approach is characterized by a certain chance factor contingent on situational pressures. In the developmental approach, decisions made about occupational interests are seen as changing through time. Since a person matures over time, his decisions about occupational interests go through a series of compromises which result in his making a rational decision about what is attainable (Falk, 1975).

A student must know his strengths and weaknesses and make occupational choices on the basis of his capacities. Self-concept has a major influence upon the aspiration level of any individual. According to Leith (1973):

> When one's concept of self approximates the evaluation placed upon him by his culture, behavior is usually consistent with the society in which he lives. Accordingly, the goals he selects and the values he assigns to them will be more nearly commensurate with not only the expectations of society but with his abilities as well. When youth possess a realistic appraisal of their abilities and skills, they will normally select goals which are achievable by their efforts, and thus they will have a reasonable chance of enjoying the rewards that come with successful achievement (p. 18).

As the student enters high school, he is faced with decisions about adult life. The senior year of high school is regarded as the time when occupational choices are to be made. The decision he makes at this age are of utmost importance because to a certain extent they will guide his future plans and aspirations. Gottfredson (1981) stated that:

> Toward the end of high school, when youngsters begin to implement their choices in actually seeking training and jobs, they become more sensitive to which particular jobs are most readily available to them. Youngsters will balance their preference for different occupations with their perceptions of the accessibility of these jobs and will try to implement the "better bets." People will not necessarily continue to pursue

> their most preferred options but will often take advantage of opportunities to obtain a satisfactory job (p. 549).

In studying vocational maturity of 9th grade students, Super and Overstreet (1960) found that

> ...the level of vocational development attained by these 9th grade boys strongly suggested that they were not ready to make sound vocational or prevocational decisions. They had not attained an understanding of themselves or of the world of work which would justify deciding on curricula leading toward certain types of occupations rather than toward others (p. 5).

Work holds an important place in human behavior, and consequently the varieties of work and ways men choose their work in Western culture have attracted the interest of behavioral scientists (Osipow, 1983). Work has the potential of meeting more than the economic needs of human beings. It also can meet broad social and psychological needs, among which are social interaction, a sense of personal dignity, identification, and human relationships (Herr and Cramer, 1979).

In 1973, Hoyt defined work as "one's efforts aimed at the production of goods or services that will be beneficial to one's fellow human beings or to oneself" (1981, p. 10).

In 1975, when the document An Introduction to Career Education: A Policy Paper of the U.S. Office of Education was published, Hoyt (1981) defined work as a "conscious effort, other than that whose primary purpose is either copying or relaxation, aimed at producing benefits for oneself and/or for oneself and others" (p. 11).

This change in the meaning of the word work was transferred from a societal obligation to basic human needs: the need to do, to achieve, to be someone because one did something; the need to know that one is needed by others, in part, for what one does (Hoyt, 1981).

Thomas (1956) related occupational choice to labor market factors as

they influence what occupations exist and what occupations will be available. Miller and Form (1980) went further in their analysis of managerial philosophies and the employee role. Vocational choice can be considered as a reflection of the worker's job as seen by managerial bureaucracy, the society, and by the worker himself. In the late nineteenth century Frederick Taylor, the father of scientific management, considered the worker as an organic machine. By the turn of the century, the worker was considered as an economic person (Miller and Form, 1980). In view of this changed concept, Parsons wrote his book Choosing A Vocation in 1909. It gave rise to the trait-and-factor approach of occupational choice which matches a person's profile of characteristics with that set of occupational or educational requirements of a job (Evans and Herr, 1978).

During later development of psychology, economies, and industry, the worker was viewed as an economic person. In order to help business people secure more productive efficiency from workers, industrial psychologists tried to bring workers more job satisfaction (Miller and Form, 1980). During the 1920's -1940's a worker was viewed as an individual personality, a psychological person whose production could be increased if there were alternatives for him to increase his income. This gave rise to the decision theory approach. Decision theory stressed the importance of personal values in choice, unlike the trait-and-factor approach (Evans and Herr, 1978).

During World War II and as a result of the Hawthorne work experiments, workers were viewed as social persons. This person is viewed as one who seeks affiliation and identity with groups and associations: the family, neighborhood, work, union, or occupational associations (Miller and Form, 1980). Vocational development theorists emphasized the socio-

logical approach.

Borow (1966) identified several sociological factors related to occupational choice, including: socioeconomic status, occupational prestige, level of aspiration, level of occupational choice, rural-urban group differences, influences of parents and others, cultural deprivation, outside work experience, and social trends (Evans and Herr, 1978).

With the beginning of the 1960's and the post industrial era, workers were viewed as sociopolitical persons. Thus, workers as sociopolitical persons wish to play an active role in decisions affecting them (Miller and Form, 1980). This led to a new perspective of vocational choice, the developmental approach, which changed the focus of concern from occupational choice as an act to occupational choice as a process (Evans and Herr, 1978).

Ginzberg et al. were quoted by Evans and Herr (1978) as saying:

> Occupational choice is a developmental process: it is not a single decision, but a series of decisions made over a period of years. Each step in the process has a meaningful relation to those which precede and follow it (p. 159).

Super used Ginzberg's theory of life stages to create a life structure. This structure is composed of five stages: growth, exploration, establishment, maintenance, and decline. The importance of Super's theory lies in the development and implementation of self-concept. An individual chooses an occupation which will allow him to function consistently with a self-picture (Herr and Cramer, 1979). Osipow (1983) quoted Super concerning self-concept theory as saying: "A person strives to implement his self-concept by choosing to enter the occupation he sees as most likely to permit him self-expression" (p. 186).

Similarly Holland (1959) developed his career typology theory which

emphasizes not only an individual's occupational choice which represents an extension of personality, but it also represents a projection of a person's view of himself onto an occupational choice.

The major problem is to integrate these theories in to one model. This is an impossible task because every theory represents a different philosophical point of view. For further consideration of vocational development, major theories will be briefly reviewed.

Overview of Theories of Vocational Development and Choice

Vocational development and career development are interchangeable terms. They embrace a body of speculation and research which attempts to explain vocational behavior as: a relationship of different kinds of self-characteristics, the bases on which people choose occupations, factors affecting their choices, family and social elements affecting their understanding and use of information, or exploratory experiences as a basis for planning or occupational preparation (Evans and Herr, 1978).

Career development is intimately related to factors that motivate or impede decisions. Herr and Cramer (1979) quoted Tiedman as saying:

> Vocational development not only occurs within the context of a single decision; vocational development ordinarily occurs within the context of several decisions .... Each decision is also to be considered in relation with a wider context of past and future decisions leading to the presentations of career... (pp. 69-70).

Vocational behavior, as viewed by most career development theories, is a continuing, fluid process of growth and learning. The theories attach considerable importance to individual self-concept, developmental experiences, personal history, and the psychological environment of the individual as major determinants of the process (Herr and Cramer, 1979).

The process of career development or vocationalization considers various factors: (e.g., psychological, sociological, cultural, economic) which over time result in effective self-career identity, decision-making ability, and career maturity. Vocationalization has to do with processes and factors that aid or impede one's acquisition of the values, knowledge, and skills leading to effective career behavior (Herr and Cramer, 1979).

There are many theories which explain how individuals make vocational choices and move toward successful career development and adjustment (Seligman, 1980). There is not an "ideal" theory of career development, which can explain every case in this field. In spite of this fragmentation and incompleteness, theoies can be used by counsellors to facilitate the process of decision-making by youth and adults.

Many tried to classify these theories into a number of categories. These various categories are not exclusive or independent, but they attempt to explain patterns of differential human career behavior and choice (Herr and Cramer, 1979).

Osipow (1983) classified these theories into: trait-factor theories, sociology and career choice, development/self-concept theory, vocational choice and personality theories, and behavioral approaches.

Evans and Herr (1978) classified them into five approaches: trait-and-factor, decision, sociological, need-drive, and developmental.

Crites (1969) discussed them as nonpsychological theories (such as accident, economic, cultural, and sociological), and the psychological theories (such as trait-and-factor, psychodynamic, developmental and decision).

Seligman (1980) classified them as: developmental theories,

personality and need theories, trait-and-factor theories, and composite theories.

Super (1981) summarized the approaches and theories of the past 75 years into three main categories:

1. Matching theories which match people and occupations, and fall into three main types: (a) differential--focusing on aptitudes or personality traits, (b) situational--stressing the socioeconomic structure, or the socialization process, and (c) phenomenological--stressing self-concepts and congruence theories.
2. Developmental theories which focus on life stages. Some stress the processes of identification and differentiation, others stress personal constructs, while still others stress development through the life span.
3. Decision-making theories which at first dealt with differential determinants of decision making, then with the stages in which decisions evolve (the process), and finally with the styles of career decision making.

Others have classified career development using somewhat different systems. For purposes of the present discussion, the theories and approaches are discussed in the following sequence: trait-and-factor, decision theory, social learning theory of career selection, sociological, personality and need, developmental and self-concept, and a theory of educational and vocational development.

Trait-and-Factor or Actuarial Approaches

The earliest theory of vocational development is known as the

trait-and-factor approach; it attempted to match people to occupations (Seligman, 1980). Looking at career choice process as a point-in-time event, trait-factor theorists assumed that straight forward matching of an individual's abilities and interests with the world's vocational opportunities could be accomplished (Amatea, 1975). When this is accomplished, the individual's vocational choice problems are solved (Osipow, 1983).

Super (1966) reported that:

> Vocational psychology, from its beginnings early in this century until shortly after 1950, was essentially a 'psychology of occupations'. The occupation was the subject, and the persons in it were the source of data on the occupation. The occupation was studied by examining the characteristics of people engaged in or succeeding it. This conventional approach to vocational choice and success, commonly referred to as trait-and-factor theory but perhaps more appropriately called applied differential psychology, made a great contribution. Without them, there would be no such field as vocational psychology (p. 2).

In this theory, the individual is considered to have a pattern of traits (e.g., interests, aptitudes, achievements, personality characteristics) which can be identified by objective means using psychological tests or inventories, and then profiled to represent the individual's potential. Similarly, the profiles of occupations are considered according to the amounts of individual traits they require. If the two profiles have a probable degree of fit, then occupational choice can take place.

Historically, Parsons was the first who had formulated trait-and-factor theory of vocational choice. In his book Choosing a Vocation (1909) he outlined his concept of vocational guidance in this way:

> In a wise choice there are three broad factors: First, a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations and their causes. Second, a knowledge of the requirements and conditions of success, advantages

> and disadvantages, compensations, opportunities, and prospects in different lines of work. Third, true reasoning on the relations of these two groups of facts (p. 5).

In short, trait-and-factor approach depends on matching an individual with an occupation. Crites (1969) explained that trait-factor theory of vocational choice emphasizes the relationship of an individual's personal characteristics to his selection of an occupation.

In describing this theory, Evans and Herr (1978) said that:

> ...trait-and-factor approach assumes that occupational choice is primarily a function of matching the person's profile of characteristics with that set of occupational or educational requirements most closely related to it. The prediction is that the closer the congruency between the individual characteristics and the requirements of occupational or educational options available, the more likely it is that adjustment and success will result (p. 152).

Herr and Swails (1973) mentioned that trait-and-factor approaches to occupational choice have usually been directed toward a specific point in time during which the individual must make an occupational decision. But since vocational development is an ongoing process, choices should be integrated with decisions made. When an individual conceives his traits--his self concept--he can maximize his freedom of choice.

Herr and Cramer (1979) stated that Miller has suggested that the assumptions underlying the trait-and-factor approach include:

1. Vocational development is largely a cognitive process; decisions are to be reached by reasoning.

2. Occupational choice is a single event. In the spirit of Parsons, choice is stressed greatly and development very little.

3. There is a single 'right' goal for everyone in the choice of vocation. There is little or no recognition that a worker might fit well into a number of occupations.

4. A single type of person works in each job. This is the other side of the coin of the third assumption. Taken together, these two notions amount to a one-person, one-job

relationship--a concept congenial of the trait-factor approach.

5. There is an occupational choice available to each individual (p. 70).

In spite of statistical sophistication, testing refinement, and technological application in the trait-and-factor approach, its prediction power of individual success is not encouraging. Occupational choice is a function of complex interaction between an individual's developmental history and his or her environment. Previous experience, information possessed, self-concept, aspirations, as well as other factors enter into choice formation (Herr and Cramer, 1979). Regardless of limitations of the trait-and-factor approach, the informational base about individuals and available options has an important influence upon vocational development, and all approaches to vocational development include trait-and-factor information (Evans and Herr, 1978).

In brief, trait-and-factor or actuarial approaches have the following steps (Dillard, 1983):

Step 1 - Analysis - the collection of data about the individual. Psychological tests are used extensively, but the interview is also frequently employed.

Step 2 - Synthesis - the organization of information to identify strengths, weaknesses, needs, and problems. The effectiveness of this step depends on the adequacy of the data collected in Step 1.

Step 3 - Diagnosis - the problem and its causes are brought out.

Step 4 - Prognosis - the probable success of each option is examined.

Step 5 - Counseling -the counselor helps the counselee to

understand, accept, and put to use information about self and occupations. Emphasis is on finding a way to deal with the present problem, for example, choosing a course of study or an occupation, but attention is also given to learning how to cope with future problems.

Step 6 - Follow-up -a check is made of the suitability of decisions and the need for additional help.

Decision Theory Approaches

This theory focuses upon the process of decision making more than on individual traits or occupational trait requirements. Decision theory approaches are economic in origin. The main assumption is that one chooses an educational or occupational goal that will maximize one's gain and minimize one's chance of loss. The gain or loss can be money as well as anything of value to the individual (e.g., greater prestige, security, social mobility, leisure time, or a spouse) (Evans and Herr, 1978; (Herr and Cramer, 1979).

Many theorists dealt with this approach among, them Kalder and Zytowski (1969). Their model consisted of the following:

1. inputs, such as intellectual and physical characteristics, time, and capital;
2. alternatives, the possible actions at a choice point; and
3. outputs, the probable consequences of various actions.

Social-Learning-Theory of Career Selection

Another approach to occupational decision making is based on principles of learning theory. One of the major applications of learning

theory to vocational decision making is offered by Krumboltz and his colleagues (Herr and Cramer, 1979).

In 1975, Krumboltz, Mitchell, and Gelatt have proposed the social-learning-theory of career selection. This theory attempted to explain how selection of courses, occupations, and fields of work are made. Krumboltz (1981) stated that:

> [The sound-learning theory] identifies the interactions of genetic factors, environmental conditions, learning experiences, cognitive and emotional responses, and performance skills that produce movement along one career path or another. Combinations of these factors interact in different ways to product different decisions.
>
> At each decision point the decider has one or more response or decision options. Internal (personal) and external (environmental) influencers (constraints or facilitators) shape the nature and number of those options and the way in which individuals respond to them. Sometimes so many options are available that the individual feels incapable of deciding. At other times options may be so limited or so disproportionate in value that the individual feels only one option is available. In fact, this person might feel s/he has no choice. But always there are options, even if one of them is not to make a decision (pp. 43-44).

Herr and Cramer (1979) summarized the factors that influence the nature of career decision making in Krumboltz's social learning theory:

1. Genetic endowment and special abilities (e.g., race, sex, physical appearance and characteristics, intelligence, musical ability, artistic ability, muscular coordination).

2. Environmental conditions and events (e.g., number and nature of job and training opportunities, social policies and procedures for selecting trainees and workers, technological developments, changes in social organizations, physical events--earth-quakes, floods, family characteristics, community and neighborhood emphases).

3. Learning experiences (e.g., Instrumental Learning Experience (ILE), in which antecedents, covert and overt behavioral responses and consequences are present. Skills necessary for career planning and other occupational and educational performances are learned through successive

instrumental learning experiences. Associative Learning Experiences (ALE's) in which the learner pairs a previously neutral situation with some emotionally positive or negative reaction, observational learning and classical conditioning are examples).

4. Task approach skills (e.g., problem-solving skills, work habits, mental sets, emotional responses, cognitive processes which both influence outcomes and are outcomes themselves) (p. 81).

The four categories of influencers and their interaction may produce several outcomes, including the following:

1. Self-Observation Generalizations (SOG's) - overt or covert statements evaluating one's own actual or vicarious performance in relation to learned standards.

2. Task Approach Skills (TAS's) - cognitive and performance abilities and emotional predipositions for coping with the environment, interpreting it in relation to self-observation generalization, and making covert or overt predictions about future events. With relation to career decision-making specifically, might include such skills as value clarifying goal setting, alternative generating, information seeking, estimating, planning.

3. Actions - entry behaviors which indicate overt steps in career progression (e.g., applying for a specific job or training opportunity, changing a college major) (Herr and Cramer, 1979, p. 81).

In brief, the person's decision to enroll in an educational program or to seek employment in a particular occupation is caused by the sequential cumulative effects of learning experiences which are affected by environmental circumstances, and the individual's reactions to these learning experiences and circumstances. Actual employment or enrollment is influenced by complex environmental factors which are beyond the control of any single individual. Thus, a change in environment can affect the type of learning experience an individual receivers which consequently can produce a change in educational or occupational preferences. Usually occupational preferences are unstable during adolescence because of the variety of learning experiences to which young

people are exposed (Krumboltz, 1981).

Sociological (Situational) Approaches

Much of the uncertainty in the right decision-making in career choice comes from situational circumstances or the social structure in which a person is reared (Herr and Cramer, 1979). Osipow (1983) reported that:

> The sociological approach is fundamentally based on the notion that elements beyond the individual's control exert a major influence on the course of his entire life, including his educational and vocational decision.
>
> ...the degree of freedom of occupational choice a person has is far less than might at first be assumed and that a man's self-expectations are not independent of the expectations society has for him.
>
> ...circumstances impose choices on individuals is the proposal that chance plays a major role in occupational decisions. That is to say, being in the "right place at the right time" may have more to do with the vocational decisions people make than systematic planning and vocational counseling (p. 225).

Lipsett (1962) identified social factors which should be considered by a person making an occupational choice and by those attempting to help him make that choice. Herr and Cramer (1979) summerized these factors as follows:

1. Social class membership - e.g., occupation income, and education of parents; place and type of residence; and ethnic background.
2. Home influences - e.g., parental goals for individuals, influence of siblings, family values and counselee's acceptance of them.
3. School - e.g., scholastic achievement, relationships with peers and faculty, values of the school.
4. Community - the "thing to do in the community," group goals and values, special opportunities or influences.
5. Pressure groups - the degree to which an individual or his parents have come under any particular influence that leads him to value one occupation over another.

6. Role perception - the individual's perception of himself as a leader, follower, isolate, etc.; the degree to which his perception of himself is in accord with the way others perceive him (p. 82).

These factors can operate as determinants or constraints in development and choice of one's life, and cannot be assessed except in individual cases (Herr and Cramer, 1979).

Blau, Gustad, Jessor, Parnes, and Wilcock (1956) developed a conceptual framework which organized social determinants of occupational choice as two groups in which external factors interact with internal determinants as the person moves toward occupational entry. Figure (1) shows the twofold effect of the social structure.

Key (1969) quoted Blau as stating:

> The left side [of figure 1] suggests that the molding of biological potentialities by the differentiated social structure (Box 3) results in diverse characteristics of individuals (Box 2), some of which directly determine occupational choice (Box 1). At the same time, as indicated on the right side, the social structure changes (Box III), resulting in a socio-economic organization at any point in time (Box II), some aspects of which directly determine occupation at selection (Box I). These two developments, separated only for analytical purposes, must be joined to explain entry into occupations (p. 57).

Herr and Cramer (1979) reported that:

> Situational approaches to career development suggest that socioeconomic structure of a society operates as a percolator and a filter of information. In essence, the position an individual occupies among the social strata making up a nation has much to do with the kind of information he or she gets, the alternative actions one can take, and the kind of encouragement which occurs. Persons are often selectively rewarded or reinforced in certain kinds of behavior depending on the group of which they are a part.
>
> Thus, career guidance has a major reponsibility to reduce the correlations between membership in certain groups and success. Individual competence and desire, not group membership, must become the criteria by which relevant information and encouragement are provided to people regardless of their sex, race, or other situational determinants (p. 84).

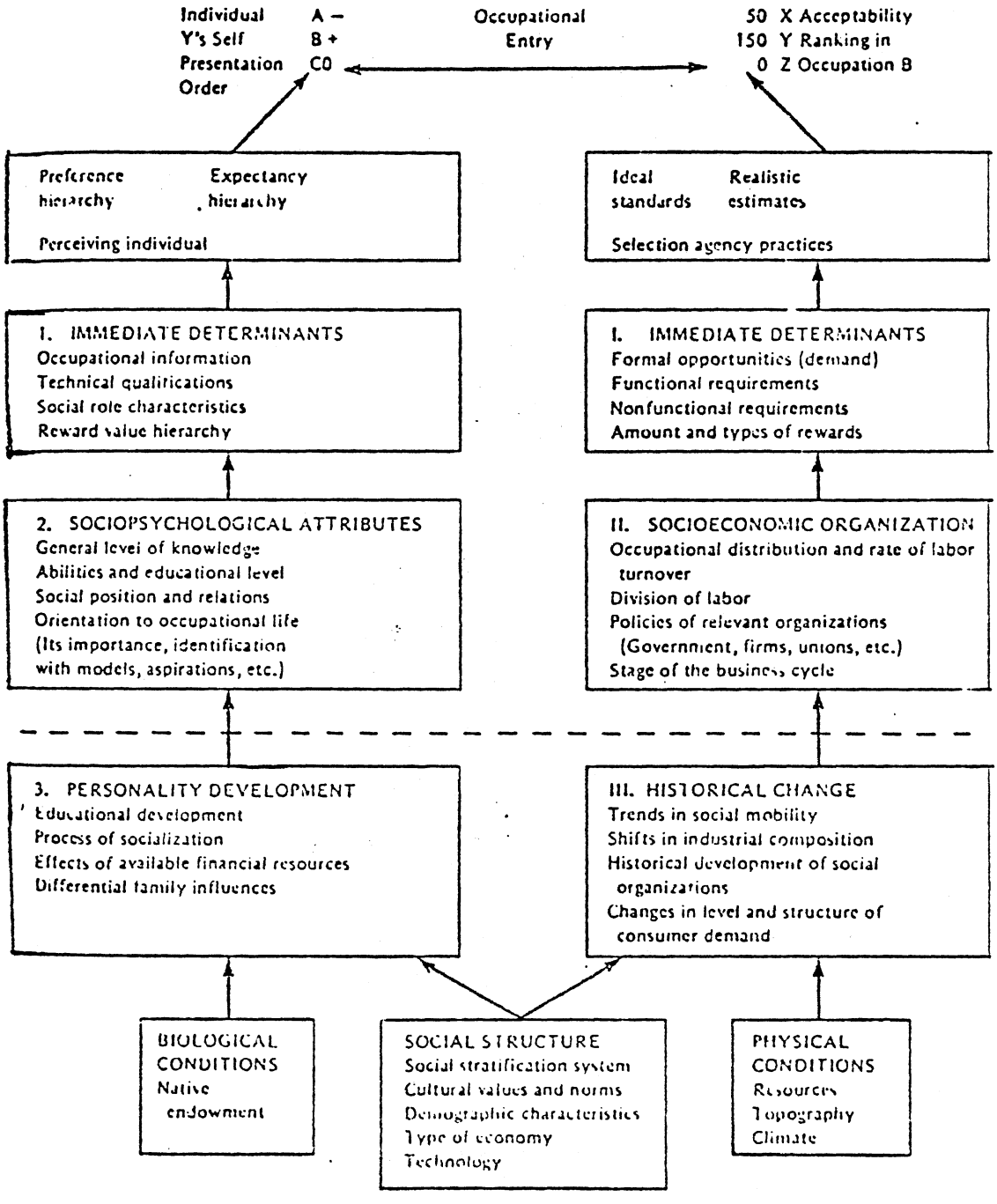

Figure 1. The Blau, Gustad, Jessor, Parnes, and Wilcock Paradigm

Personality and Need Theories

A group of theorists emphasized the importance of personality or needs in determining career choice and planning (Seligman, 1980). The major assumption of these approaches is that because of differences in personality structure, individuals develop certain needs and seek satisfaction of these needs through occupational choices (Evans and Herr, 1978). These approaches develop a classification of personality or needs, and then relate it to gratifications available in different occupational or educational options (Herr and Cramer, 1979).

Osipow (1983) described personality theories as:

> The general hypothesis underlying these studies is that workers select their jobs because they see potential for the satisfaction of their needs. A corollary hypothesis is that exposure to a job gradually modifies the personality characteristics of the worker so that, for example, accountants eventually become like one another if indeed they were not similar in personality to begin with (p. 10).

These theories include: Roe personality theory, Holland occupational types and environments theory, and Hoppock composite theory, each of which is described below.

Roe's Personality Theory. Roe developed her theory of vocational choice based on a series of investigations of life, physical, and social scientists and their developmental backgrounds and personalities (Norris, et al., 1979). She concluded that scientists of different specialites interact differently with people and things. A second conclusion was that personality differences between scientists of different specialties are partially the result of influences of child-rearing practice (Osipow, 1983).

Roe's theory classifies as a "needs" theory in that primary attention is given to the needs and desires that stimulate the individual

to have an occupational preference. According to Roe, vocational choice is a matter of interaction between genetic and environmental factors that become part of the life pattern (Norris et al., 1979). Osipow (1983) pointed out that there are three primary components in Roe's theory:

1. She adapted Maslow's needs hierarchy to vocational choice. Individuals have needs and they try to satisfy their needs through their occupational choice.
2. She used Murphy's concept of canalization of psychic energy, and its emphasis on early childhood experience and rearing practice and their influence on vocational choice.
3. She pointed out the interaction of genetic factors and the needs hierarchy would probably determine vocational behavior and choice.

Roe classified the family atmosphere - child rearing environment into three primary patterns (Norris, et al., 1979):

1. The overprotective or overdemanding parent where the child's higher-order needs are granted for conforming behavior. This results in adult orientation to occupations related to people, as in service, entertainment or social work, where individuals become known.
2. The neglecting or rejecting parent where rejecting or denying the child's physical or emotional needs leads the child to seek gratification in occupations related to things. This object-oriented interest manifests itself in occupations involving little contact with people.
3. The acceptance family atmosphere where parents show casual acceptance or loving acceptance. The child's needs are met

regardless of their hierarchal level. This leads the child to seek occupations which balance interest in people and things, as in cultural areas.

The child rearing practices, the manner in which parents interact with the child, the resulting need structure, and the child's occupational orientation toward people or things led Roe (1956)) to develop her field-and-level conception of occupational families.

Roe (1956) classified occupations into eight fields and each field into six levels. The eight fields are: (I) Service, (II) Business Contact, (III) Organization, (IV) Technology, (V) Outdoor, (VI) Science, (VII) General Culture, and (VIII) Arts and Entertainment. Fields I, II, III, VII, and VIII are primarily oriented toward people, and fields IV, V and VI are oriented principally toward things.

The levels of responsibility, training, or education are: (1) Professional and Managerial (I), (2) Professional and Managerial (II), (3) Semiprofessional, small business, (4) skilled, (5) Semi-skilled, and (6) Unskilled.

It is assumed that the major variable affecting choice of a field is interest, which is a residual of early childhood. Also, the level attained is a function of genetic endowment (i.e., intelligence), education attained, and other capabilities.

Thus the "needs" approaches indicate that vocational choices are made in response to some form of self-classification and an attempt to affirm a personal behavior style (Evans and Herr, 1978).

Holland's Theory. Osipow (1983) stated that Holland's theory of vocational selection represents the marriage of two concepts: (1) career choices represent an extension of personality, and (2) people project

their views of themselves and the world of work onto occupational titles. Holland (1966, 1973) placed greatest emphasis on the role of personality. He considered personality style to be the major determinant of vocational decision-making and development. Holland assumed that an individual is a product of heredity and environment. The continuing influences of genetic potentialities and the interaction of the individual with the environment develops a preferred personal style for dealing with social and environmental tasks (Amatea, 1975).

Holland (1973) stated four working assumptions which constitute the heart of his theory. They indicate the nature of personality types and and environmental models, how the types and models are determined, and how they interact to create the phenomena--vocational, educational, and social--the theory is meant to explain:

1. In our culture, most persons can be categorized as one of six types: realistic, investigative, artistic, social, enterprising, or conventional.

2. There are six kinds of environments: realistic, investigative, artistic, social, enterprising, and conventional.

3. People search for an environment that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles.

4. A person's behavior is determined by an interaction between his personality and the characteristics of his environment (pp. 2-4).

To emphasize the person-situation correspondence, Holland classified the work environments into six categories analogous to the six personality types, and he described the person and the working environment in the same terms (Herr and Cramer, 1979). Figure 2 shows the description of these types (Amatea, 1975).

Herr and Cramer (1979) reported that Holland addressed himself to skill level within occupational environments. This skill level is

Personality Types		*Environmental Models*
Type	*Description*	*Typical Occupations in Which This Type is Found*
Realistic	Persons oriented toward this role are characterized by aggressive behavior, interest in activities requiring motor coordination, skill and physical strength, and masculinity. They prefer concrete rather than abstract problem situations, and typically avoid tasks which involve interpersonal and verbal skills.	Laborers, machine operators, aviators, farmers, truck drivers, carpenters, etc.
Intellectual	Persons oriented toward this role are characterized by thinking rather than acting and emphasize organizing and understanding the world rather than dominating or persuading. They tend to avoid close interpersonal contact.	Physicist, anthropologist, chemist, mathematician, biologist, etc.
Social	Persons characterized by this role seek close personal relationships and are adept in these relationships. They avoid situations where they might be required to engage in intellectual problem solving or use of extensive physical skills.	Clinical psychologist, counselor, foreign missionary, teacher, etc.
Conventional	Persons orinted toward this style are typified by a great concern for rules and regulations, great self-control, and a strong identification with power and status. Since this person prefers structure and order he seeks interpersonal and work situations in which structures are readily apparent.	Cashier, statistician, bookkeeper, administrative assistant, post office clerk, etc.
Enterprising	Persons characterizing this role are verbally skilled but uses these skills for manipulative and persuasive purposes, rather than for supportive purposes. They are concerned about power and status and they work very hard to acquire it.	Car salesman, auctioneer, politician, master of ceremonies, buyer, etc.
Artistic	Persons oriented toward this style are characterized by strong manifestations toward self expression particularly through the arts media. Such people dislike structure, show their emotions much more easily and demonstrate relatively little self-control. They tend to be relatively introceptive and asocial.	Poet, novelist, musician, sculptor, playwright, composer, stage director, etc.

Figure 2. Holland's Schema of Corresponding Personality Styles and Occupational Environments.

dependent on the person's intelligence and self-knowledge.

The following are the assumptions that underlie Holland's theory (Dillard, 1983):

1. People express their personalities through their vocational choice.

2. People are attracted to occupations that they feel will provide experience suitable to their personalities.

3. People who choose the same vocation have similar personalities, and they react to many situations and problems in like manner. Six personality types are identified by Holland: realistic, investigative, social, conventional, enterprising, and artistic.

4. Because people in an occupation have similar personalities, they create environments that are like them. Holland has described six kinds of environments, and each one has a physical setting with special problems and stresses.

5. People search for environments and vocations that permit them to exercise their skills and abilities, to express their attitudes and values, to take on agreeable problems and roles, and to avoid disagreeable ones.

6. Career satisfaction, stability, and achievement depend on the agreement between personality and environment (created largely by the people with whom the work is done.

Holland (1966) summarized his theory as follows:

> ...the choice of an occupational title represents several kinds of information: the subject's motivation, his knowledge of the occupation in question, his insight and understanding of himself, and his abilities. In short, item responses may be thought of as limited but useful expressive or projective protocols (p. 2).

It seems clear that according to Holland's theory, a person's decision on vocational choice or changing his vocation can be explained in terms of personality pattern and environmental model.

Hoppok's Composite Theory. Hoppok made a noticeable effort to integrate much of the research and theorizing which has been done on career planning and development. The general framework is psychological needs (Seligman, 1980). The following ten postulates are from Hoppock's

composite theory (Hoppock, 1976):

1. Occupations are chosen to meet needs.

2. The occupation that we choose is the one that we believe will best meet the needs that most concern us.

3. Needs may be intellectually perceived, or they may be only vaguely felt as attractions that draw us in certain directions. In either case, they may influence choices.

4. Career development begins when we first become aware that an occupation can help to meet our needs.

5. Career development progresses and occupational choice improves as we become better able to anticipate how well a prospective occupation will meet our needs. Our capacity thus to anticipate depends upon our knowledge of ourselves, our knowledge of occupations and our ability to think clearly.

6. Information about ourselves affects occupational choice by helping us to recognize what we want, and what we have to offer in exchange.

7. Information about occupations affects occupational choice by helping us to discover the occupations that may meet our needs, what these occupations offer us, and what they will demand of us.

8. Job satisfaction depends upon the extent to which the job that we hold meets the needs that we feel it should meet. The degree of satisfaction is determined by the ratio between what we have and what we want.

9. Satisfaction can result from a job which meets our needs today, or from a job which promises to meet them in the future, or from a job that we think will help us to get the job we want.

10. Occupational choice is always subject to change when we believe that a change will better meet our needs (pp. 111-112).

In commenting on Hoppock's theory and others based on the concept of satisfying needs, London (1973) quoted Zaccaria as saying:

> The central focus of these theories is upon the process of choosing an occupation, the factors influencing the choice, and the adequacy of the choice as measured by need satisfaction, success, or personal adjustment. Presumably if a good occupational choice has been made, the individual finds happiness and advancement and remains in the occupation. Inadequate choice leads to unfulfilled needs, failure or maladjustment. In the latter case, the resultant frustration and tension create the need for another occupational choice -- hopefully a better one. There is little if any, cognizance taken of

> occupational choice and work in the total life span of the individual. Each job is dealt with separately and relatively independent from preceding or subsequent choices (p. 184).

Developmental and Self-Concept Theories

Developmental theorists accept the developmental nature of the process of making career plans and view developmental process as an ongoing and continuous one, extending throughout the life span. Developmental theories view career maturation in terms of stages and life tasks. Developmental theorists recognize that people may need counseling at any point during their life span (Seligman, 1980).

Concerning developmental approach and decision-making Super (1981) said:

> Developmental theories, while not rejecting the matching approach, treat them as an insufficient basis for career guidance. This is because studies of the life span and life space have made it clear that occupational choice or assignment is not something that happens once in a lifetime, on leaving school or the university. These theories hold that people and situations develop and that a career decision tends to be a series of minidecisions of varying degrees of importance. They hold that these minidecisions add up to a series of occupational choices, each of which only seems to be one maxidecision (p. 38).

Osipow (1983) summarized this approach as follows:

> The approach holds as its central theses that (1) individuals develop more clearly defined self-concepts as they grow older, although these vary to conform with the changes in one's view of reality as correlated with aging; (2) people develop images of the occupational world which they compare with their self-image in trying to make career decisions; and (3) the adequacy of the eventual career decision is based on the similarity between an individual's self-concept and the vocational concept of the career he eventually chooses (p. 10).

The best known proponents of developmental theories are (1) Ginzberg, Ginzburg, Axelrad, and Herma, a team composed of an economist, a psychiatrist, a sociologist, and a psychologist respectively, and (2)

Super. Both Super and Ginzberg and his colleagues were influenced by Buehler's view of development and based their translations of Buehler's theory on research in career development of a relatively small group of middle class white males. Their models represent ideal individuals with considerable freedom of choice and minimal constraints. Therefore their theories fall short if the client is a woman, disadvantaged, or from a minority group (Seligman, 1980).

Ginzberg's Theory. Ginzberg and his associates were the early leaders who laid the base for the current concept of vocational development as a longitudinal process which coincides with other developmental processes (Norris et al. , 1979). In particular, they stated:

> Occupational choice is a developmental process: it is not a single decision, but a series of decisions made over a period of year s. Each step in the process has a meaningful relation to those which precede and follow it (Ginzberg et al., 1951, p. 185).

Ginzberg (1972) summarized the key elements in the original theory as follows:

1. Occupational choice is a decision-making process that extends from pre-puberty until the late teens or early 20's when the individual makes a definitive occupational commitment.
2. Many educational and other preparatory and exploratory decisions along the way have the quality of irreversibility.
3. The resolution of the choice process always ends in a compromise, since the individual seeks to find an optimal fit between his interests, capacities, and values; and the world of work (p. 169).

Osipow (1983) reported that the Ginzberg group concluded that there are four significant variables involved in vocational choice. These variables are:

1. Reality factor which causes an individual to respond to the pressures of his environment in making decisions with vocational impact.

2. Educational process since the amount and kind of education a person has had will limit or facilitate the flexibility and type of vocational choices he makes.

3. Emotional factors involved in the individual's responses to his environment are important since it seemed that personality and emotional factors should have vocational concomitants.

4. Individual values were deemed to be important in vocational choice, since they should influence the quality of the choice made by virtue of the differing values in various careers (p. 192).

London (1973) reported that Ginzberg and his associates have divided the process of occupational decision-making into the following three periods:--

A. The period of fantasy choice governed largely by the Child's wish to be an adult, [beginning at early childhood].

B. The period of tentative choice, beginning at about age 11, and determined largely by interests, then by capacities, and final ly by values.

C. The period of realistic choice, beginning at about age 17, during which exploration, crystalization, and specification succeed each other. During the realistic period the individual works out a compromise between what he wants and values most and the opportunities which are available to him (p. 185).

Ginzberg et al. mentioned that vocational behavior finds its roots in the early life of the child and develops over time, and career choice becomes increasingly reality-oriented and more specific as one moves toward the choice itself (Herr and Cramer, 1979).

In restating their theory, Ginzberg (1972) says that the process of occupational decision making is no longer limited to a decade; it is an open-ended process. Studies of this theory showed that many people who had decided on a career early in life and pursued it for a number of years or decades with marked success might, as a result of changes within themselves or within their work environment, seek a new career that held forth the promise of greater satisfactions.

With respect to irreversible impact on one's career because of his earlier choice, the notion of this process is no longer valid due to vast development of educational and economic opportunities. With the changing desires of the individual and changing circumstances, the compromise between his preferences and the constraints of the world of work can be changed to optimization. No one makes an occupational choice that satisfies all of his principal needs and desires, therefore optimization is more relevant than a compromise.

Ginzberg reformulated his group's theory, and now it includes the following paraphrased elements (Ginzberg, 1972):

1. Occupational choice is a process that remains open as long as one makes and expects to make decisions about his work and career. In many instances, it is coterminous with his working life.

2. While the successive decisions that a young person makes during the preparatory period will have a shaping influence on his later career, so will the continuing changes that he undergoes in work and life.

3. People make decisions about jobs and careers with an aim of optimizing their satisfactions by finding the best possible fit between their priority needs and desires and the opportunities and constraints that they confront in the world of work (p. 172).

Moreover, there are other concepts in Ginzberg's theory, as follows (Dillard, 1983):

4. Constraints need to be given considerable weight. Ginzberg identifies these as low-income family situation; parent attitudes and values; inadequacies of the educational institution, including its failure to keep up with changing opportunities for women and minority group membership; and ineffective linkages among school levels and between schools and jobs, community institutions, the armed forces, and other

institutions.

5. The opportunity structure of the world of work is given more weight, as is the importance of the individual's perception of opportunities that have in the past been closed to him or her.
6. Value orientation is now given more weight and is considered to play a major role in the individual's search for satisfaction. One's life style also has an impact on vocational decisions as an effort is made to achieve a balance between work and other activities.

In brief, Ginzberg (1972) reformulated their theory as: "Occupational choice is a lifelong process of decision-making in which the individual seeks to find the optimal fit between his career preparation and goals and the realities of the world of work" (p. 172).

Super's Developmental Approach. Super can be considered the father of the career development movement (Evans and Herr, 1978). His theory was published in 1953 and stated 10 propositions of vocational development (Norris et al., 1979). Super restated his theory in 1957 as 12 propositions (Super and Bachrach, 1957).

Super's approach has attempted to integrate insights from differential, developmental, social, and phenomenological psychology to explain vocational behavior (Super, 1966). His theory combines many of the concepts from the trait-and-factor, sociological, and need-drive approaches into a more organized whole (Evans and Herr, 1978). Super was influenced by Ginzberg et al. and Buehler in developing a structure for the whole life span. This structure is composed of five stages (London, 1973; Seligman, 1980):

1. Growth stage (birth -14) which is a period of general physical

and mental growth. Self-concept develops through identification with key figures in family and in school; needs and fantasy are dominant early in this state; interest and capacity become more important with increasing social participation and reality testing.

2. Exploration stage (15 -24) where general exploration of work, self-examination, role try-outs, leisure activities, and part-time work are the major trends. This stage is divided into tentative, transition, and trial (little commitment) substages.
3. Established stage (25 - 44) where the individual seeks to enter a permanent occupation. There may be some trial early in this stage, with consequent shifting, but establishment may begin without trial, especially in the professions. Substages of this period are: trail (with commitment and stabilization), and advancement, which is the creative years for most persons.
4. Maintenance stage (45 - 64) where continuation in one's chosen occupation is the major characteristic of this period.
5. Decline stage (65 on) where physical and mental powers decline, work activities change and in due course cease, and new roles must develop. this stage divided into deceleration and retirement substages.

Super focuses on the exploratory and establishment stages. He said:

> Within these stages are factors internal as well as external to the individual which influence the choice made. These factors continue to narrow the array of options the individual considers. There is an emphasis, then, on vocational convergence and greater specificity in behavior (Herr and Cramer, 1979, p. 94).

Super assumes that vocational developmental tasks reflect the larger life stage tasks described by Havighurst. Other theories influenced Super as well. Differential psychology and trait-and-factor notions showed that people are differentially qualified for occupations and could receive differential rewards for occupations. Self-concept theory indicated that one's behavior reflects the attempt to implement self-evaluative thought (Super and Bachrach, 1957).

These influences can be traced in the 12 propositions of Super and Bachrach's theory which were slightly modified for updating by Super (1981):

> Proposition 1. People differ in their abilities, interests, and pesonalities.
>
> Proposition 2. They are each qualified, by virtue of these characteristics, for a number of occupations.
>
> Proposition 3. Each of these occupations requires a characteristic pattern of abilities, interests, and personality traits, with tolerances wide enough to allow both some variety of occupations for each individual and some variety in each occupation.
>
> Proposition 4. Vocational preferences and competencies, the situations in which people live and work, and hence their self-concepts change with time and experience, although self-concepts are generally fairly stable from late adolescence until late maturity, making choice and adjustment a continuous process.
>
> Proposition 5. This process of change may be summed up in a maxicycle or series of life stages characterized as those of growth, exploration, establishment, maintenance, and decline , and these stages may in turn be subdivided into (a) the fantasy, tentative, and realistic phases of the exploratory stage and (b) the trail and stable phases of the establishment stage. A recycling process takes place in the transition from one stage to the next involving minicycles of new growth, reexploration, and reestablishment; recycling is also attempted each time an unstable or multiple-trail career is unstabilized.
>
> Proposition 6. The nature of the career pattern (that is, the occupational level attained and the sequence, frequency, and duration of trial and stable jobs) is determined by the individual's parental socioeconomic level, mental ability,

personality characteristics, and by the opportunities to which he or she is exposed.

Proposition 7. Development through the life stages can be guided, partly by facilitating the process of maturation of abilities and interests and partly by aiding in reality testing and in the development of self-concepts.

Proposition 8. The process of career development is essentially that of developing and implementing self-concepts; it is a synthesizing and compromise process in which the self-concept is a product of the interaction of inherited aptitudes, neural and endocrine makeup, opportunity to play various roles, and evaluations of the extent to which the results of role playing meet with the approval of superiors and fellows.

Proposition 9. The process of synthesis of or compromise between individual and social factors, between self-concept and reality, is one of role playing whether the role is played in fantasy, in the counseling interview, or in real life activities such as classes, clubs, part-time work, and entry jobs.

Proposition 10. Work satisfactions and life satisfactions depend upon the extent to which the individual finds adequate outlets for abilities, interests, personality traits, and values; they depend upon establishment in a type of work, a work situation, and a way of life in which he or she can play the kind of role that growth and exploratory experiences have led him or her to consider congenial and appropriate.

Proposition 11. The degree of satisfaction people attain from work is proportionate to the degree to which they have been able to implement self-concepts.

Proposition 12. Work and occupation provide a focus for personality organization for most men and many women, although for some persons this focus is peripheral, incidental, or even nonexistent and other foci such as leisure activities and homemaking are central (pp. 37-38).

Super et al. (1957) said that occupational development:
...is an ongoing, continuous, generally irreversible, orderly, patterned, and dynamic process, which involves interaction between the individual's behavioral repertoire and the demands made by society, that is, by the developmental tasks (p. 53).

It should be recognized that Super's research was conducted in the absence of a comprehensive career education program. His theory created fields of research. He said, theories seek to organize knowledge; they

both facilitate research which will add to the store of knowledge, and to make our present knowledge useful in practice (1966).

In describing Super's theory, Osipow (1983) said that:

> The theory is a well-ordered, highly systematic representation of the process of vocational maturation.... The original version of the theory was too general to be of much practical value, and even its conceptual value was limited by its sweeping style. Later versions, however, are much more detailed, as Super and his associates have attempted to indicate the parameters of the theory in more specific terms. Consequently, in its current state, it has considerable utility for both practice and research in vocational psychology. Most of the research reported on Super's theory generally supports his model (p. 185).

Although this theory is the most thorough of the existing approaches in career development, Super (1981) still hoped for the development of a global theory which would be more powerful than the sum of its parts.

A Theory of Educational and Vocational Development.

According to Ciavarella (1972) most theories have hypothesized vocational choice as a long-term developmental process, but failed to consider educational choice as a process. He stated that:

> The school culture--that is, the school's philosophy, its curriculum, its administrators, its teachers, its students, and the broader community of citizens who give or withhold their support--has an influence on the educational and vocational decisions that students make, or that the school makes for them, and these deisions, in turn, have a limiting or widening effect on the career decisions that inevitably follow (p. 252).

Ciavarella tried to include the influences of the school in the vocational development postulates so that the process of choice becomes more responsive to student development during the important school years. The following propositions are drawn largely from those presented by Super in 1953.

1. Individuals develop in accordance with varying patterns of

abilities, needs, interests, and temperaments.

2. Because of these varying developmental patterns, they are capable of fitting into a variety of curricula and occupations.

3. Subject matter courses, as components of various curricula, are wide enough to include ranges of academic skill level (e.g., from general or industrial shop mathematics to calculus); and, specific positions or jobs, as components of various occupations, are wide enough to include ranges of job skill level (e.g., from carpenter to architect).

4. Choice is a continuous developmental process that extends from the pre-school period through and beyond later retirement; it is a process that (a) includes the developmental life stages of growth, exploration, establishment, maintenance, and decline, with an intensity of educational and vocational choices occurring during the exploration stage, or what is usually called the high school and young adult years; (b) subdivides the pre-exploratory and exploratory choice-making periods into those described as fantasy, tentative, and realistic, with the entering and leaving phases of each period depending on the intelligence of the individual, his knowledge of self, his knowledge of educational-vocational requirements and opportunities, and his maturational readiness to synthesize these data into a meaningful composite for decision-making; and (c) involves compromise between the goals he aspirationally wants and those he realistically can achieve.

5. Educational development and vocational development are interactive processes in which educational choices have implications for occupational choices and occupational choices have implications for educational choices.

6. A number of behavioral patterns and response styles develop in the elementary school years (e.g., habits of industry, coping and mastery behavior, achievement orientation, independence, self-direction, subject matter likes and dislikes, attitudes toward teachers and peers, formation of occuational sterotypes, etc.) which, in the course of development, have a major impact on the educational and vocational decisions that high school students and young adults eventually make.

7. The educational and vocational decisions that students make are directly influenced by school cultural factors, examples of which are: the philosophy of the school; the relevance and latitude of curricular offerings; curriculum status and worth; the psychological climate of the school; teachers feelings of status and their attitudes toward the worthiness of colleagues, courses, and students; students feelings of self-worth; peer groups; and the community's commitment to education, as determined by its ability and willingness to pay and the budgetary emphasis it gives to school programs.

8. Whether at school, at work, or in everyday community life, each individual is striving to maintain his self-concept and, accordingly, selects from and promotes those activities, situations, and human relationships that afford him the closest likeness to his own self-image.

9. The process of career development is facilitated when the individual reaches that level of maturational self-insight where he can, and does, integrate into a realistic framework of decision-making his personal needs and values, his in and out-of-school experiences, his abilities and limitations, his likes and dislikes, and his personality characteristics.

10. Satisfactions at school, at work, and in everyday community life are directly dependent upon the availability of role-playing activities and opportunities, the kinds of tasks the individual is called on to perform, how well he performs these tasks in the eyes of peers and significant others, and the extent to which all these factors are compatible with the perceived self (Ciavarella, 1972, pp. 257-258).

Determinants of Vocational Choice

Career development theorists generally acknowledge that career maturation and planning, and vocational choice are determined or at least influenced by a multitude of factors (Seligman, 1980).

Super (1957) said: "In choosing an occupation, one is not merely choosing a way of earning a living, one is also choosing a way of life" (p. 15). In choosing a vocational program, students are affected by several factors. Since vocational choice is part of goal setting, Conway said that there are seven major factors students usually consider in setting their goals. These factors are summarized as follows (Conway, 1981):

1. Monetary reward: students tending to prefer careers offering a considerable amount of money fit into the enterprising occupational group of the Holland Theory and are characterized by their considerable initiative and drive in seeking power, status, and material wealth.

2. Type of work: Some people prefer working primarily with data, others with people, and still others with things. Interest in the type of work performed is vital to achievement of long-term goals.
3. Level of responsibility: Some people prefer positions far from responsibilities. Usually students think of short-term objectives, and they leave the level of responsibility they want to achieve postponed to a later time.
4. Environment: Physical facilities can be an influencing factor. The environment of manufacturing areas and offices are very important and should be considered.
5. Social needs and desires of a person and his family should be considered in career and goal setting. For some persons social needs are met in cities, for others in small towns.
6. Prestige: the need for ego satisfaction and prestige can often be met by the general public, prestige associated with certain types of careers, or by reputation of a particular organization.
7. Security: Some people are great risk takers, while others are not because they lack confidence in their intelligence and/or personality, or competence in a given field. They tend to seek career choices that seem to be more secure.

Students are influenced by several factors in choosing their vocations. Among these factors are: social (e.g., socioeconomic class); and individual (e.g., values, talent, and knowledge of opportunity) Harsen and Borow, 1973). Moreover vocational choice can take place by chance or under the pressure of certain characteristics, where students

have no alternatives to choose from. Factors such as race, sex, and physical handicaps, as Falk (1975) said, can have a constraining effect on the occupational choice.

Super (1966) said that:

> The career model of developmental vocational counseling is one in which the individual is conceived of as moving along one of a number of possible pathways through the educational system and on into and through the work system. His starting point is his father's socioeconomic status, he climbs up the educational ladder at a speed fixed both by his psychological and social characteristics and by the resources provided by his family environment (p. 3).

Super developed a list of possible determinants of career patterns. These determinants were drawn from field of psychology, sociology, economics, and other disciplines. Key (1969) quoted Super listing these determinants as:

I. Individual Characteristics and Experience

A. Psychological Characteristics

1. Intelligence
2. Special Aptitudes
3. Interests
4. Personality
   a. Attitudes (e.g., toward work, toward authority)
   b. Values (e.g., work values)
   c. Specific traits (introversion - extroversion, etc.)
   d. Needs (e.g., achievement needs, nurturance needs)
5. Temperament
6. Self-concept
7. Drive (level of aspiration)

B. Physical Characteristics

1. Height
2. Weight
3. Body structure
4. Physical strength
5. General health
6. Constitution
7. Endocrine balance
8. Adequacy of physiological functioning
9. Special physical assets
10. Special physical handicaps

C. Experiences

1. Amount and quality of education
2. Amount and quality of specialized training
3. Special skills
4. Prior work history
5. Hobbies
6. Organizational membership
7. Social and recreational activities
8. Amount and quality of interpersonal relationships established (e.g., acceptance of others, acceptance by others)
9. Identification with role models
10. Rejection of role models
11. Concept of others

II. Individual's Personal Situation

A. Parental Family Background

1. Socioeconomic status of parents
2. Family financial situation
3. Father's job
4. (Possibly) Mother's job
5. Occupational mobility in family background
6. Reputation of family in community
7. Placement in family (only child, oldest, youngest, etc.
8. Number of siblings
9. Parental aspirations
10. Cultural stimulation
11. Interpersonal relationships in family

B. Own Family Situation

1. Married, single, separated, or divorced
2. Number of dependents
3. Health, age, and sex of dependents
4. Aspirations of spouse
5. Interpersonal relationships in family

C. General Situation

1. Current socioeconomic status
2. Current financial situation
3. Current job
4. Personal reputation
5. Geographic location
   a. Regional
   b. Urban-rural
6. Military service obligation
7. Citizenship
8. Race
9. Religion
10. Competition encountered (in school, job, etc.)

11. Attitudes of significant others
    a. Toward the individual himself
    b. Toward work

III. Individual's Environment

1. Economic conditions in: country, area, community
2. Occupational structure of the area and community
3. Occupational trends of the area and community
4. Community attitudes about occupations
5. Peace or War
6. Technological developments
7. Characteristics of the era

IV. Nonpredictable Factors

1. Accident to self or to important others
2. Illness of self or important others
3. Death of important others
4. Unanticipated opportunities
5. Unanticipated liabilities (e.g., property loss through theft, fire, storm) (pp. 61-63).

It is possible to categorize these determinants according to control --whether the individual could control them or not (Key, 1969).

Recently Super (1980), in describing life-span, showed that occupational career determinants are life-space and career-development personal and situational determinants.

Personal determinants consist of the genetic or the biological heritage which interacts with situational determinants and produces the person's intelligence, specific aptitudes, self-knowledge (or awareness), academic achievement, and other traits. These determinants include needs, values, interests, attitudes, self-awareness, and situational awareness.

The situational determinants are the social structure and the economic conditions in which the individual functions from infancy through adulthood and old age. They include historical change, socioeconomic organizations and employment, school, community, and family (Super, 1980).

Personal and situational determinants affect preference, choices, and entry into the labor force and assumptions of the worker role, and role changes.

Abusal (1983) mentioned that Haller stated five factors that have influence on youth's occupational choice. These factors are:

1. The youth's occupational decisions and concerns, including interests in the future, level of occupational aspiration, and particularly occupational choices;

2. Changes in occupations themselves;

3. The immediate situation of the youth including his physical facilities, namely the accessibility and quality of schools and his financial resources, and also the expectations of others, like his parents, teachers, counselors and the dominant culture which influence his own self-conceptions and sometimes affect his actual job changes;

4. Other life decisions including education, marriage, and preferred residence; and

5. The youth's conception of his ability, his occupational self-conceptions, and his conceptions of behavior appropriate to his sex (pp. 23-24).

Borow (1966) had identified some of the social factors which relate to occupational choice. These factors include socioeconomic status, occupational prestige, level of aspiration, differences among rural-urban groups, cultural deprivation, work experience, and social trends. Lipsett (1962) has observed that social class, home influences, school climate, community values, pressure groups, and role perceptions interact directly with vocational development.

Super and Overstreet (1960), in their study of the vocational maturity (VM) of ninth grade boy students, found several factors are correlated to vocational maturity, although others are not. The following variables had statistically significant positive coefficients of correlation with the VM Index Total: Intelligence, Parental

Occupational Levels, Family Cohesiveness, School Curriculum, Cultural Stimulation, Boy's Vocational Aspiration Level, Agreement: Level of Aspiration and Expectation, School Achievement (grades), Achievement-Underachievement, Participation in School Activities, Participants in Out-of-School Activities, Adolescent Independence.

Social theories give greatest emphasis to background and environmental factors affecting vocational choice. Nearly all theories incorporate some of the following factors into their conceptual framework (Seligman, 1980):

1. Parental background: Perhaps the most important factor affecting an individual's career development is his or her parental background. Generally sons tend to either duplicate the type and level of their fathers' work in their vocational choices, or move upwards in their chosen occupations. High parental earnings is a strong urge for sons to choose well paid occupations, as Osipow (1983) suggested. Herr and Cramer (1979) mentioned that parental pressure toward college attendance is a stronger determinent of educational aspiration than is assessed ability. Roe's theory of career choice emphasized the importance of child rearing patterns on children's subsequent career development. Super (1957) mentioned that individuals of two-parent homes who have well-educated and well-employed parents are highly inspired to achieve college education and a prestigious and stable career. Therefore counselors should know parents' occupational and educational level and expectations, their personalities, and their style of rearing their children so that they will be able

to help their clients in their career development.

2. Birth order: Zytowski (1968) found that a larger proportion of first born children attend college than do other born children. Levine (1976) hypothesized that children from smaller families tend to score higher on intelligence tests than those from larger families, because children from smaller families receive more attention, advice and information. This explains the apparent intellectual superiority of first born children.
3. Environment: It has been found that the environment in which individuals live affects their career choices. Sewell and Orenstein (1965) stated, "As the population density of an area increases, aspiration levels tend to rise" (p. 555). Usually individuals from smaller towns tend to have limited occupational information. Consequently their opportunities are limited, and they fail to make good use of their potential. On the other hand, urban youth may feel considerable environmental pressure to succeed and compete, resulting in higher aspirations which may not fulfill their abilities and interests.
4. Socioeconomic status: Like parental background, socioeconomic status also affects career development. Economic limitations do present barriers. Individuals of low socioeconomic status have more difficulty in making use of their potential for better career planning. Levine (1976) concluded that socioeconomic origins are directly related to intellectual development, educational and occupational achievement, academic performance, and level of aspirations.

5. Ethnicity: Ethnic group membership--majority or minority--affects career choices because of opportunities available to individuals. Blacks seem to emphasize the importance of income more than whites do, while whites emphasize the importance of status and feelings of accomplishments in their work more than blacks do.
6. Gender: Gender influences career development. Although society's views of working men and women do differ, recent research showed that differences in career development of the two sexes are diminishing.
7. Self-esteem: Super's theory of career development emphasized self-esteem as a major determinant of career patterns and choices. Greenhaus (1973) found that individuals who are high in self-esteem tended to have positive attitudes toward work, they enjoyed thinking and planning for their careers, and viewed work as a vehicle of self-expression.
8. Abilities and interests: These are factors which affect career development. Generally, the higher an individual's intelligence, the higher his level of career aspiration, achievement, and satisfaction. Similarly, the greater the relationship between an individual's abilities, interests, and aptitudes and the requirements of his job, the greater will be the job satisfaction and the better will be the job performance.
9. Personality traits: Individuals in the same or closely related occupations tend to have similar personalities. Occupational values of blue collar workers emphasize security,

while white collar workers tend to emphasize intellectual stimulation and aesthetic gratification. Other personality variables also influence career development.

10. Expectations and prestige: By the end of elementary school most students develop a fairly clear idea of prestige attached to many occupations, while by the end of high school, many students have an image of persons found in their occupations. These images influence career decisions. Therefore counselors should foster occupational information and experience so that clients' expectations are in line with reality.

11. Other factors which have a significant effect on career development include the economic and political climate, demographic factors, leisure time activities, the school attended as well as peers, friends, family members, teachers and counselors. Chance should not be underestimated as an influencing factor. Caplow (1954) stated that "Error and accident often play a larger part than the subject himself is willing to concede" (p. 214) in career planning. The world of work (the job market) perhaps is the biggest chance factor in career planning. The law of supply and demand has a stronger effect on people's choice than their satisfactions.

Finally Seligman (1980) reported that:

> Counselors should help clients to minimize the effect of chance through careful planning, and should prepare their clients not to neglect unanticipated events which disrupt the best plans and to react by formulating alternative plans (p. 31).

Characteristics of Students in Industrial Education and Training

In spite of the growing interest in vocational education in general and industrial education and training in particular in recent years, it is surprising that negligible factual information is available about the kinds of individuals served by industrial education and training programs in Jordan.

Even in the United States, with the tremendous amount of research in the social sciences and the growing interest in vocational and technical education at the secondary level, not much data are available on the specific characteristics of students enrolled in each training program of vocational education. Instead of that there are some reports and researchs which release information on vocational education students as a group.

In this respect Evans and Herr (1978) stated that:

> Except for the few exceptions noted below, data are not available on characteristics of students enrolled in each of the fields of secondary school vocational education. Lacking this desirable information, we can only look at the known characteristics of vocational students as a group. Obviously these data are quite incomplete (pp. 213-214).

Although the vocational curriculum is generally assumed to be for males, Project TALENT showed that approximately 60 percent of vocational students in the secondary school are males. Concerning academic aptitude, males enrolled in vocational courses were these who achieved at the fortieth percentile of academic ability. Using father's occupations as a measure of socio-economic status, Evans and Herr (1978) reported that vocational students come from lower socio-economic status families. More than half of the student's fathers work as laborers and craftsmen.

It has often been reported that the vocational curricula have low status in high school, and about 33 percent of high school graduates of a vocational curriculum felt that they had been looked down upon because of the course they took. Some studies of earnings of vocational graduates have indicated that they earn more per year than graduates from other programs, and vocational students of high ability and high socio-economic status have particularly impressive earnings (Evans and Herr, 1978).

In describing the technical student, Philips (1968) quoted Van Hall as saying:

> The technical student is work oriented, pragmatic, has an unquenchable sense of curiosity and comes to school with clearly established career goals. The technical student will show a strong aptitude in the mathematical, scientific and mechanical areas, but will show little interest in English and social studies. The technical student's scores on standardized intelligence tests may not be a good indication of his true potential as a student, since these tests are largely verbal-based. Finally the technical student does not possess a deep social consciousness concerning what some students consider the great issues of the day. Club activities which are directly related to the technical student's curriculum are the only ones in which he is likely to show an interest (pp. 22-23).

Related Studies

In the United States

A study of 698 Trade and Industrial (T & I) Students done by Sing (1982) to determine factors which cause these students to enroll in vocational trade and industrial programs in the Jordan School District in Sandy, Utah shows some of the findings as follows:

1. Personal interest and preparation for employment after high school were factors which influenced students to enroll.
2. Extrinsic sources, such as parents, friends, counselors, or school administrators, show little support for encouraging

students to enroll in trade and industrial courses.

3. After completing T & I courses there were many alternatives: (a) students were prepared for further education after high school rahter than for a career. (b) T & I courses encouraged 39% of students to go for technical school, 35% for job placement, 16% for college entrance, and 10% for the military.
4. Parents, students, administrator, T & I instructors, and/or counselors suggested that it would be possible to increase enrollment in T & I programs if the school system:
   A. Taught students general skills which would prepare students to obtain and hold employment.
   B. Provided students with information about different kinds of career opportunities.
   C. Provided students with learning activities which are similar to real life experiences.
   D. Provided students with actual work experience as part of the high school program.
   E. Assisted students with self-understanding and self-direction necessary to make wise career decisions.

In their study of 16,400 students, Shearon and his colleagues (1980) found that factors which influenced students' decisions to attend North Carolina Community/Technical Colleges and Technical Institutes were (in descending order): The programs available at the institution, the location of the institution, the low cost, and the quality of instruction. The study included 11,785 curriculum students attending mainly conventional technical, vocational, or college transfer programs; and 4,615 continuing education students attending mainly occupational or

academic extension programs.

Concerning reasons for deciding to continue their education, the curriculum students were economically motivated, first to earn more money and, second to get a better job. Continuing education students indicated that learning things of interest was their most important reason for pursuing their education and earning more money was their second choice.

Concerning location of the institution, 60 percent of the curriculum students traveled 10 or fewer miles while less than nine percent traveled farther than 25 miles to attend classes.

Concerning the availability of student financial aid as an influence on student's ability to attend, the study showed that about 53 percent of vocational, 50 percent of technical, and 35 percent of college transfer students were receiving financial aid.

All groups indicated that parking facilities were most important, followed by library resources, as services to attract students to enroll in technical and continuing education programs.

Curriculum students were influenced by unspecified sources (self-influence) followed by institutional personnel, their mothers, other relatives, and other students.

Nearly 40 percent of the curriculum students planned to work towards a baccalaureate degree, including 41 percent of the technical students and 18 percent of the vocational students from this group.

Abusal (1983),in his recent study to identify factors which may influence a student to select one vocational program over another, and to identify general demographic characteristics of vocational students, surveyed 537 high school students in the area vocational-technical

schools located in the state of Oklahoma. He found that 71 percent of those students were males, and only 29 percent were females. Eighty-four percent of the students were whites, whereas 16 percent were blacks, American Indians, or others. The data revealed that there is a significant relationship between sex, race, educational level of mothers, occupational classification of fathers, grade point average, future plans, and work experiences of students and the type of training program in which they were enrolled.

The findings indicate that there are five factors which may have significant influence on students' decisions to enroll in specific programs. These factors (ranked in order of importance) are: (1) student's interest, (2) income level, (3) availability of jobs in the area of training, (4) work conditions, and (5) level of ability in the field of specialization.

In Jordan

In his follow-up study of industrial education graduates in Jordan, Al-Buckhari (1968) surveyed 84 students in their final year at Amman and Irbid industrial schools. The purpose of the study was to identify the students' social and cultural backgrounds, and their vocational aspirations.

Al-Buckhari found that 58 percent of the sample studied were from rural areas, 42 percent were from urban areas. Concerning socioeconomic class the study showed that 30 percent were from poor families, 70 percent were from the lower middle class, and none were from the middle class.

The study of the father's education showed that 28.5 percent were

illiterate, 64.5 percent had some elementary education, and 7 percent had more than elementary education. Concerning father's occupation, agriculture related jobs were 41.6 percent; small business and unskilled workers were 8.3 percent each.

In Al-Buckhari's study of academic achievement of the students before they joined industrial schools, 53.3 percent of the students mentioned that they ranked first to fifth in their class, 33.3 percent said they ranked between sixth and tenth, and 31.4 percent said they ranked between 11th and 15th.

Concerning factors influencing students to choose industrial education, Al-Buckhari reported that 35.7 percent of the interviewees mentioned self-choice as the first influencing factor, 14.3 percent of the sample have been influenced by prevocational courses, 19.1 percent have been influenced by preparatory school (teachers and principals), 20.2 percent were influenced by society (relatives and friends); and 10.7 percent indicated that they have not been influenced by anyone.

Al-Buckhari believed that in Jordanian society the father's role has the final word for his children's choice. It is possible that because of lower socioeconomic class, the father prefers his child to join the industrial school to help increase the the family income. Al-Buckhari's study showed that 54.7 percent of graduates mentioned that their fathers did contribute to the student's choice.

The aspirations of industrial graduate students, as the study showed, were high. Eighty percent indicated occupations which require university study (e.g., engineering), 19.4 percent indicated occupations which do not need college education, and 5.9 percent indicated craftsman job level occupations.

The study showed that students prefered to work after graduation outside Jordan in the oil rich countries. This is an indication of eagerness for further higher education by earning and saving funds (though work) to support their further education.

Sa'adah (1973) performed a study of the general conditions in industrial secondary schools, and ways to develop industrial education in Jordan. The study included all 12th grade students (180), and almost all instructors (40) at the two existing industrial secondary schools (at Amman and Irbid) in the East Bank of Jordan.

The researcher found that 81.7 percent of ISS students enrolled because of their own interest, 68.7 percent of them enrolled due to work availability for industrial education graduates, 24.4 percent were enrolled on their parents' advice. Only 7.5 percent of student enrollment was due to the influence of friends, 4.4 percent was due to teachers' influence, 2.5 percent was due to availability of boarding facilities, while 1.9 percent was due to students' past experience in one of the industrial trades.

The study revealed that 87.5 percent of teachers prefered high body strengths as a requirement for enrollment, while 82.5 percent required qualifying tests before students required enrollment in the ISS program, and 70 percent of teachers prefer students of higher grade point average.

Students (63.7 percent) expressed their dissatisfaction with the program choice procedure which emphasized their grade point average, but neglected student attitudes and abilities.

Although 82.5 percent of teachers declared that they provide guidance and counseling services, 69.4 percent of ISS students denied

those services. The study revealed that ISS had no counselors, and 90.2 percent of students and 72.5 percent of teachers expressed the urgent need for vocational guidance and counseling to help ISS students solve their problems.

The findings indicated that 68.1 percent of students expressed their willingness to continue their higher education while 63.8 percent preferred to join work related to their training after graduation.

A study done by UNESCO (1980) on education and training for manpower development in Jordan revealed that 18.7 percent of male students of tenth grade level failed to obtain the education or training of their first choice. Moreover, 45.6 percent of male students allocated to institutions other than general secondary and industrial secondary schools, failed to obtain their first choice. In sum, large numbers of students allocated to commercial, postal, and agricultural secondary education must have been disappointed in varying degrees by the selection system, which undoubtedly has implications for morale and performance in these branches of education and training. This points out that student guidance and counseling services should be extended in the preparatory and secondary level education. These programs should include (UNESCO, 1980):

- personal-social adjustment guidance;
- educational guidance;
- career and occupational guidance;
- career selection and development guidance;
- placement services; and
- follow-up

Guidance support services such as remedial and enrichment classes,

social and financial aid schemes for students, youth employment agencies, and others, would be important resources for the implementation of the guidance program (UNESCO, 1980).

In his follow-up study of industrial education and its effect on individual income, Ebidate (1980) surveyed 366 workers in the East Bank of Jordan. The sample consisted of 30 percent of ISS graduates, 30 percent from TTC, and 40 percent of polytechnic graduates during the period 1960-1976. The study showed that these graduates were of average socioeconomic status before they enrolled in their training programs.

The major factors influencing students to enroll in industrial education were their personal interest, and then their parents' advice.

Work availability and potential income for the graduates of the three study categories were higher than those of graduates in other educational categories. The relative weight for different categories were 71.6 percent for ISS graduates, 64.6 percent for TTC, and 73 percent for polytechnic graduates.

The study revealed that graduates' attitudes toward their vocations and industry were positive. Graduates felt proud of their trades, and they would not like to change their vocations even if they were given a chance to do so. The relative weights of these attitudes were 73 percent for ISS, 72.1 percent for TTC, and 71.6 percent for polytechnic graduates.

CHAPTER III

METHODOLOGY

The primary purpose of this study, as stated in Chapter I, was to determine the factors influencing students in Jordan industrial secondary schools and trade training centers to select the programs in which they enrolled. The secondary purpose of this study was to identify some background characteristics such as scholastic standing, socioeconomic background, and aspirations and expectations of students in their respective programs.

The review of literature revealed little information about the factors influencing the vocational choice of male students in industrial education and training in Jordan and about the characteristics of those students. These factors and characteristics are thought to be important for educational planning and for developing a student career and guidance system. This chapter reports the research procedure employed to accomplish the purposes of the study and includes the following sections: (1) type of research, (2) the population, (3) the sample and sampling process, (4) instrument development, (5) collection of data, and (6) data analysis.

Type of Research

In describing research designs and their use, Gay (1981) stated that:

> Descriptive research involves collecting data in order to test hypotheses or to answer questions concerning the current status

> of the subject of the study. A descriptive study determines and reports the way things are..., the descriptive method is usually used for investigating a variety of educational problems. Typical descriptive studies are concerned with the assessment of attitudes, opinions, demographic information, conditions, and procedures. Descriptive data are usually collected through a questionnaire survey, interviews, or observation (p. 153).

Descriptive research selected for use in this study was considered to be appropriate for collecting descriptive and associational information from a predetermined population at a specific point in time. This type of research is practical for identifying trends, current conditions, and potential needs, as well as providing information on which administrative decisions can be based (Hillway, 1964).

The Population

The population from which the sample was selected for this study was delineated to include all students in Grades 10, 11, and 12 enrolling during the fall of 1983 in industrial secondary schools, trade training centers in the Ministry of Education (MOE), in Wadi Sir Training Center of UNRWA, and in apprenticeship training Centers in the Vocational Training Corporation (VTC).

The Sample

The study performed by Al-Buchari (1968) included graduates of two industrial secondary schools, the only schools at that time. Today there are seven industrial secondary schools, twenty-four trade training centers under the Ministry of Education, ten apprenticeship training centers under the Vocational Training Corporation, and one trade training center under UNRWA.

Industrial education and training includes twenty-four programs in

manufacturing, construction, and maintenance occupations. The total population of students is about 10,800. Because of the wide variety of programs, type of training sites, and geographic locations of the institutions, a sample was chosen to conduct the study. A description of the sample selection process follows.

The Sampling Process

Tables II, III, and IV are taken from MOE and VTC sources, for the scholastic year 1983/84. They tabulate programs, numbers of students, and names of schools and training centers and their geographic locations. They also show the lack of homogeneity of programs, schools, and locations and categories of training under investigation. In a situation such as this, Van Dalen (1979 stated that:

> An investigator may use stratified random sampling to get a more representative sample. When employing this technique, one divides the population into strata by some characteristic which is known from previous research or theories to be related to the phenomenon under investigation, and from each of these smaller homogenous groups one draws at random a predetermined number of units (p. 133).

For the present study the population was stratified into three identifiable subpopulations, or strata, within the total student population --(a) students enrolled in industrial secondary schools (ISS) of the MOE, (b) students enrolled in trade training centers (TTC) of the MOE and UNRWA, and (c) students enrolled in apprenticeship training centers (ATC) of the VTC. Each stratum was proportionately represented in the sample to guard against wild samples and to assure that sub-populations of interest would not be overlooked.

Due to the large number of programs in the three strata, (which exceed 24), and the different popularity and academic requirements of

these programs, the investigator grouped them into the following six major clusters: electrical, car mechanics, climatization, metalwork, woodwork, and construction.

Gay (1981) stated that:

> Cluster sampling is sampling in which groups, not individuals, are randomly selected. All the members of the selected groups have similar characteristics.... Cluster sampling is more convenient when the population is very large or spread out over a wide geographic area. Sometimes it is the only feasible method of selecting a sample (p. 93).

Practical considerations lead to the use of cluster sampling. In this procedure the unit of selection - the cluster - contains two or more population units. Cluster sampling is useful when the population is naturally grouped into units; here the unit of selection was the individual class. From every cluster one program was chosen provided that it was available in 15 percent of training locations of any category, and the total sample taken was not less than 30 subjects. Gay (1981) suggested:

> In general, the minimum number of subjects believed to be be acceptable for a study depends upon the type of research involved. For descriptive research, a sample of 10% of population is considered minimum. For smaller populations 20% may be required. For correlational studies at least 30 subjects are needed to establish the existence or nonexistence of a relationship. For casual-comparative studies and many experimental studies, a minimum of 30 subjects per group is generally recommended (p. 98).

Table VI shows the number of students in the programs chosen and in the three educational categories. Because "Building and Shuttering" has limited number of students compared to other programs, it can be excluded from the study.

The figures in Table VI represent two classes from each training program. In order to prevent the bias that might occur from sampling either one or the other grade level of the program, approximately half

TABLE VI

STUDENT POPULATION IN THE CHOSEN PROGRAMS FROM THE THREE EDUCATIONAL CATEGORIES

Program	Grade	Educational Category ISS	TTC	ATC	Total
Electrical Utilization	10		305	160	465
	11	187	247	51	485
	12	181			181
Automechanics	10		99	339	438
	11	188	84	181	453
	12	171			171
Central Heating	10		141	256	397
	11	170	112	169	451
	12	152			152
Welding	10		137	395	532
	11	152	123	324	599
	12	98			98
Carpentry	10		168	266	434
	11	154	95	163	412
	12	127			127
Building & shuttering	10		38	41	79
	11	32	40	25	97
	12	17			17
Total		1629	1589	2370	5588

the sample was taken from the first year, and the other half was from the second year.

Concerning geographic locations, random sampling was applied for every program. After the location was identified, a coin was tossed to determine which class to take, first or second year. The results of this sampling process are shown in Table VII for ISS, Table VIII for TTC, and Table IX for ATC students.

Instrument Development

To achieve the objectives of this study the instrument used was formulated as a result of literature related to vocational choice and quantitative differences between students in different vocational programs. Several instruments were studied and evaluated for possible use in this study. Of these, the resources used to develop the instrument were: Philips (1968), Schack (1978), Graham (1978), Anderson (1981), Abusal (1983), Shearon et al. (1980).

The investigator developed the instrument in three parts: Part A was designed to elicit information about student sociological, demographic, economic, educational, and experiential characteristics. Part B was designed to elicit responses about factors affecting student choices and tracking in programs. This included 29 items on people, information, economic, and general factors. The student was asked to rate his responses on a Likert-type scale which is spread over a five-point scale: Very Great, Great, Moderate, Little, Very Little and Does Not Apply as an additional sixth point. Scoring was (0) for Does Not Apply, and (5) for Very Great. Part C was designed to elicit responses about students' aspirations. The student was given a list of

TABLE VII

SAMPLE OF CLASSES AND STUDENTS OF INDUSTRIAL SECONDARY SCHOOLS (ISS)

Program	Grade	School					Total
		Amman	Sweileh	Zarqa	Irbid	Mafraq	
Electrical/ Utilization	11			14			14
	12	15	15			14	44
Automechanics	11				17	12	29
	12		12	16			28
Central Heating	11		13		13		26
	12	15				11	26
Welding	11	15		14		12	41
	12				14		14
Carpentry	11		15	17			32
	12	13			15		28
Total		58	55	61	59	49	282

TABLE VIII

SAMPLE OF CLASSES AND STUDENTS OF TRADE TRAINING CENTERS (TTC)

Program	Grade	Center							Total
		Marka	Ashrafieh	Sweileh	WadiSir(UN)	Ajloun	Jeresh	Mafraq	
Electrical Utilization	10		14	11		6			31
	11	14					15	10	39
Automechanic	10	15							15
	11		15	10	14			1	39
Central Heating	10				16		14		30
	11		16					10	26
Welding	10				15	8			23
	11	12		8					20
Carpentry	10	13		12					25
	11		9		15				24
Total		54	54	41	60	14	29	20	272

TABLE IX

SAMPLE OF CLASSES AND STUDENTS OF APPRENTICESHIP TRAINING CENTERS (ATC)

Program	Grade	Center					Total
		WadiSir	Ashrafieh	Yajouz	Hashimeih	Hakama	
Electrical/ Utilization	10		17	13	9		39
	11					6	6
Automechanics	10	20		11	13		44
	11		16				16
Central Heating	10			8		10	18
	11				15		15
Welding	10		15			16	31
	11	13			14		27
Carpentry	10			12			12
	11	15	18			8	41
Total		48	66	44	51	40	249

seven career goals and asked to rate his goals up to the fifth goal. He was also asked to state whether he would like to change his current category of education or his training program in industrial education and training.

To obtain instrument validity, the investigator consulted a group of educators: Dr. James Key, Oklahoma State University (OSU) Agricultural Education; Dr. Joseph Clary, Head of the Department of Occupational Education at North Carolina State University; Dr. Gordon Eric Jones, OSU; and the investigator's dissertation committee members. Then the instrument was developed for use in the study during fall 1983 (see Appendix C).

For further validation, the Arabic translation of the instrument was field tested on one group from ISS, one group from TTC, and one group of apprentices in VTC (each group consisted of 10 students). The results of this field test helped to organize the items, choosing better words that were clearer, and understandable to the respondents (See Appendix D).

Data Collection

With the approval of the Minister of Education, a request was forwarded to the five Directors of Education in the governorates of the East Bank of Jordan, to the Director General of the Vocational Training Corporation, and to the General Director of UNRWA in Jordan to enable the investigator to collect data for the study (see Appendix E). The investigator contacted school principals to suggest a convenient timetable for a visit and for data collection during October 1983. After the data were collected, they were coded and key punched for computer analysis.

Data Analysis and Statistical Treatment

The instrument used in this study included 65 questions divided into three categories: Part A included questions which were informational about the students. Part B included statements on program choices and tracking to which the students responded on a Likert-type scale ranging from Very Great to Does Not Apply (scored from five to zero), and Part C included questions and statements about student aspirations to be ranked in order of preference. The responses to the 65 questions provided data to meet the six objectives of the study. Objectives one to four were met using Part B of the instrument. Objective five was met using Part A, and Objective six was met using Part C.

Objectives one to four investigated factors influencing students' choice of programs. Results were presented in numbers, percentages, and means, and a t-test was used to indicate the significance of influence of different factors as students perceived them. Since the mean of the ratings of the scale used was 2.5, the mean of the responses for each factor should be greater than 2.5 to be considered significant. The one-tailed test was used at the .05 level of significance. The formula for the calculation of the t-statistic is (Linton, 1975):

$$t = \frac{\bar{X} - 2.5}{S / \sqrt{n}}$$

Where $\bar{\bar{X}}$ = the mean value of the response,

S = the standard deviation, and

n = the sample size.

The Kruskal-Wallis test was used to find whether there were significant differences among the educational categories or among the

training programs concerning student perceptions of a group of factors influencing their program selections. The formula used for the calculation of the H value is (Linton, 1975):

$$H = \frac{12}{N\,(N+1)} \sum_{A=1}^{a} \frac{T_A^2}{n_A} - 3\,(N+1)$$

Where T_A = the sum of the ranks for each level of independent variable,

n_A = the corresponding number of subjects for each T_A,

N = the total number of subjects, and

a = the number of levels of the independent variable.

Objective five analyzed demographic, sociological, educational characteristics of students. Results were presented in numbers and percentages. Relationships among these characteristics and students' vocational choice were investigated using chi-square tests at the .05 level. The formula for calculating chi-square is (Linton, 1975):

$$\chi^2 = \sum_{A=1}^{a} \frac{[f_o - f_e]^2}{f_e}$$

Where a = the number of levels of the independent variables,

f_o = the observed frequency for each of the a cells, and

f_e = the expected frequency for each of the a cells, based on some theoretical expectation.

The sixth objective concerning student aspirations and expectations was tested by analyzing data through counting responses and calculating percentages for each future goal. The Kruskal-Wallis test was used to indicate if there were significant differences among students' educational categories or among their training programs in ranking their future goals. Also their attitudes toward their type of education and their programs were dealt with in the same manner. A chi-square test was used to indicate relationships existing between a student's attitude toward change and his training program or his educational category.

CHAPTER IV

DESCRIPTION OF DATA AND RESULTS

Introduction

The purpose of this study was to determine selected factors influencing male students to select their programs in industrial education and training, and to identify student expectations and aspirations after they graduate from their programs in industrial education and training in the East Bank of Jordan.

A secondary purpose was to identify some background characteristics, including scholastic standing, socioeconomic status , and demographic characteristics, of selected students in specific programs in industrial education and training.

A review of literature showed that people, sources of information, economic, and personal and general factors were major factors influencing students' choice of their programs. Therefore, a group of traits, which covered age, community size, father's and mother's educational level, head of household occupation, family income, student's scholastic standing, and student's previous work experience, was selected to project a clear image of the characteristics of students enrolled in industrial education and training in Jordan. Student future expectations and aspirations were also studied, as were the student's commitment to the type of education, and to the training program in which he was enrolled, and his future goals according to his priorities.

In order to accomplish the above mentioned purposes, the following six objectives were formulated.

Objective I

To determine which people influenced a student's decision to select his program.

Objective II

To determine which sources of information influenced a student's decision to select his program.

Objective III

To determine which economic factors influenced a student's decision to select his program.

Objective IV

To determine which personal and general factors influenced a student's decision to select his program.

Objective V

To determine the general characteristics of students enrolling in industrial education and training.

Objective VI

To determine the aspirations and expectations of students enrolling in programs of industrial education and training.

Results of the analysis of this study relative to the objectives are presented in this chapter. Data were collected by means of a structured questionnaire administered to students enrolled in five selected programs: electrical utilization, automechanics, central heating, welding, and carpentry in the three educational categories: industrial secondary schools (ISS) trade training centers (TTC), and apprenticeship training centers (ATC) in Amman and Irbid governorates of the East Bank

of Jordan.

The questionnaire was divided into three parts: The first identified socioeconomic, demographic, and educational characteristics of students. The second identified factors which infuenced the choice of their programs. The third identified their commitment to the educational category and to the training program for which they enrolled, and explored their aspirations and expectations after graduation.

The stradafied, random sample consisted of 803 students from the three educational categories: 282 students from ISS, 272 students from TTC, and 249 students from ATC. A total of 792 students, or 98.6 percent of the original sample, completed the questionnaire. Of these 277 students were from ISS (35 percent), 270 students (34.1 percent) were from TTC, and 245 students (30.9 percent) were from ATC (see Table X).

Classified according to training programs, there were 171 students (21.6 percent) in electrical, 171 students (21.6 percent) in automechanics, 137 students (17.3 percent) in central heating, 151 students (19.1 percent) in welding, and 162 students (20.4 percent) in carpentry.

Data analyses are presented in six sections relevant to the six objectives and congruent with the three parts of the survey instrument, as follows: first, data pertaining to people influencing students' choice of their programs, second, data concerning sources of information influencing students' choice, third, data concerning economic factors influencing students' choice, and fourth, personal and general factors which influenced students' choice of their programs.

The fifth section presents data concerning selected personal and social background attributes of students enrolling in industrial

TABLE X

RESPONDENTS IN NUMBERS AND PERCENTAGESBY STUDENTS EDUCATIONAL CATEGORY AND TRAINING PROGRAM

Program	Educational Category				Respondents	
	ISS	TTC	ATC	Total	N	%
Electrical	58	70	45	173	171	98.8
Automechanics	57	54	60	171	171	100.
Central Heating	52	56	33	141	137	97.2
Welding	55	53	58	156	151	96.8
Carpentry	60	49	53	162	162	100.
Total	282	272	249	803		
Respondents N	277	270	245		792	
%	98.2	99.3	98.4			98.6

education and training; and the relationship of these characteristics and their educational category and training program.

In the sixth section, data concerning the student's commitment to his educational category and to his training program, and his future goals according to his priorities are presented. The relationship of future goals, educational category, and training program is also discussed.

Factors Influencing Students' Choice of Programs

In this study data were obtained from a total of 792 students. Responses were recorded on a Likert-type scale which ranged from (5) for Very Great, (4) for Great, (3) for Moderate, (2) for Little, (1) for Very Little, and (0) for Does Not Apply.

In order to estimate the influence of every factor, its weighted average response was calculated. To locate this average, ranges were given for different degrees of influence on the Likert-type scale as follows:

Very Great	= 4.5 - 5.00
Great	= 3.5 - 4.49
Moderate	= 2.5 - 3.49
Little	= 1.5 - 2.49
Very Little	= 0.5 - 1.49
Does Not Apply	= 0.0 - 0.49

Frequency counts of factors according to degrees of influence, their percentages, and the weighted average response for each factor influencing students' choice of their programs were calculated. Thus

every factor can be located in one of the above ranges.

The t-test was used to determine significant facts based on students' perception of factors influencing their decision to enroll in a certain training program in an educational category.

Since the Likert-type scale has five points, the mean of the ratings of the scale is 2.5, and the mean of the responses as for the degree of influence of each factor should be significantly greater than 2.5. The one-tailed t-test was used for every factor for all students, and for each educational category.

As shown in the survey instrument, and the objectives of the study, the factors influencing students' choice were classified into four groups: people, sources of information, economic factors, and personal and general factors.

All students were subdivided according to their educational category or training program, and weighted average responses were rank ordered accordingly.

The Kruskal-Wallis test was performed to indicate if there was a significant difference among the educational categories or among the training programs concerning students' perception of factors influencing their program selection.

People Influencing Students' Choice of Programs

Objective One: To determine which people influenced a student's decision to select his program. Questions 28 through 39 asked for student's perception of the influence of selected people on his decision to choose his training program.

Table XI illustrates frequency count, percentages, and weighted average response of all students to people influencing their choice of programs. The t-test for the following factors: "parents," "brothers/sisters," "people working in the occupation," and "friends" yielded values of 14.063, 3.441, 2.210, and 1.920, respectively. These values were all significant at the .05 level. Data presented in this table indicated that the weighted average response for these four significant factors were in the moderate influence range, and "parents" had the highest influence. For the other eight factors, the t-tests indicated that none was a significant factor influencing students' choice of their programs.

Table XII illustrates frequency count, percentages, and weighted average response of ISS students to people influencing their choice of programs. The t-test for "parents" yielded a value of 8.831 which was found significant at the .05 level. Data presented in this table indicated that "parents" was the only significant influencing factor. Its weighted average response was in the moderate range of influence. The t-tests for the other 11 factors indicated that none was a significant factor influencing ISS students in choosing their programs.

Table XIII illustrates frequency count, percentages, and weighted average response of TTC students to people influencing their choice of programs. The t-test for parents yielded a value of 5.171 which was significant at .05 level. Data presented in this table indicated that "parents" was the only significant influencing factor. Its weighted average response was in the moderate range. For the other factors, t-tests indicated none was a significant factor influencing TTC students choice of their programs.

TABLE XI

PEOPLE INFLUENCING ALL STUDENTS' CHOICE OF THEIR TRAINING PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

People		Amount of Influence: Very Great 5	Great 4	Moder -ate 3	Little 2	Very Little 1	Does not Apply 0	Weighted Average Respone $\bar{X}$	t-value
28- Parents	n	281	85	219	58	117	32	3.327	14.063 (*)
	%	35.5	10.7	27.7	7.3	14.8	4.0		
29- Brothers/ Sisters	n	175	81	185	97	191	63	2.701	3.441 (*)
	%	22.1	10.2	23.4	12.2	24.1	8.0		
30- Relatives	n	102	83	151	101	267	88	2.227	-4.856
	%	12.9	10.5	19.1	12.8	33.7	11.1		
31- School counselor	n	37	13	51	43	310	338	0.992	-33.181
	%	4.8	1.6	6.4	5.4	39.1	42.7		
32- School Principal	n	62	35	74	73	403	145	1.542	-19.026
	%	7.8	4.4	9.3	9.2	50.9	18.3		
33- Academic Teachers	n	49	58	97	117	333	138	1.686	-16.328
	%	6.2	7.3	12.1	14.8	42.1	17.4		
34- School Graduates	n	110	70	131	113	275	93	2.177	-5.685
	%	13.9	8.8	16.5	14.3	34.8	11.7		
35- School Mates	n	88	90	149	134	255	76	2.235	-4.923
	%	11.1	11.4	18.8	16.9	32.2	9.6		
36- Friends	n	142	110	158	117	208	57	2.609	1.920 (*)
	%	17.9	13.9	19.9	14.8	26.3	7.2		
37- People Working in the Occupation	n	186	101	128	81	209	87	2.638	2.210 (*)
	%	23.5	12.8	16.2	10.2	26.3	11.		
38- Vocational Teachers	n	99	65	138	93	265	132	2.045	-7.894
	%	125	8.2	17.4	11.7	33.5	16.7		
39- Others	n	14	1	9	4	32	732	0.178	-85.020
	%	1.8	0.1	1.1	0.5	4.1	92.4		

Note: The t-Value at 791 df and 0.05 level is 1.645 ,(*) is significant at 0.05 level.

TABLE XII

PEOPLE INFLUENCING ISS STUDENTS' CHOICE OF THEIR TRAINING PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

People		Amount of Influence: Very Great 5	Great 4	Moder-ate 3	Little 2	Very Little 1	Does not Apply 0	Weighted Average Respone $\bar{X}$	t-value
28- Parents	n	92	35	78	23	38	11	3.314	8.831 (*)
	%	33.2	12.6	28.2	8.3	13.7	4		
29- Brothers/ Sisters	n	56	23	74	29	66	29	2.592	0.926
	%	20.2	8.3	26.7	10.6	23.8	10.5		
30- Relatives	n	32	29	59	38	82	39	2.191	-3.247
	%	11.6	10.6	21.3	13	29.6	14		
31- School counselor	n	4	2	14	11	85	161	0.639	-31.091
	%	1.4	0.7	5	4	30.7	58.1		
32- School Principal	n	20	8	25	27	120	77	1.375	-13.175
	%	7.2	2.9	9	9.8	43.3	27.8		
33- Academic Teacher	n	24	21	34	45	84	69	1.733	-8.169
	%	8.7	7.6	12.2	16.3	30.3	24.9		
34- School Graduates	n	32	22	53	44	71	55	2.043	-4.708
	%	11.6	7.9	19.1	15.9	25.6	19.9		
35- School Mates	n	25	18	52	60	79	43	1.993	-5.720
	%	9	6.5	18.8	21.7	28.5	15.5		
36- Friends	n	34	37	61	50	70	25	2.422	-0.851
	%	12.3	13.4	22.	18.	25.3	9.		
37- People Working in the Occupation	n	49	37	35	31	73	52	2.285	-1.999
	%	17.7	13.4	12.6	11.2	26.4	18.8		
38- Vocational Teachers	n	25	19	40	39	79	75	1.726	-8.098
	%	9	6.9	14.4	14.	28.5	27.1		
39- Others	n	5	1	3	1	9	258	0.177	-48.930
	%	1.8	0.4	1.1	0.4	3.3	93.1		

Note: The Value at 276 df and 0.05 level is 1.645,(*) is significant at 0.05 level.

TABLE XIII

PEOPLE INFLUENCING TTC STUDENTS' CHOICE OF THEIR TRAINING PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE.

People		Amount of Influence: Very Great 5	Great 4	Moder-ate 3	Little 2	Very Little 1	Does not Apply 0	Weighted Average Respone $\bar{X}$	t-value
28- Parents	n	87	22	65	22	57	17	3.033	5.171 (*)
	%	32.2	8.2	24.1	8.2	21.1	6.3		
29- Brothers/ Sisters	n	67	22	42	39	75	25	2.600	0.946
	%	24.8	8.2	15.6	14.4	27.8	9.3		
30- Relatives	n	43	25	32	24	110	36	2.107	-3.813
	%	15.9	9.3	11.9	8.9	40.7	13.3		
31- School counselor	n	10	2	15	10	112	121	0.870	-23.005
	%	3.7	0.7	5.6	3.7	41.5	44.8		
32- School Principal	n	24	14	16	14	148	54	1.481	-11.403
	%	8.9	5.2	5.9	5.2	54.8	20		
33- Academic Teacher	n	13	20	21	27	141	48	1.493	-12.373
	%	4.8	7.4	7.8	10	52.2	17.8		
34- School Graduates	n	43	21	32	35	110	29	2.130	-3.708
	%	15.9	7.8	11.9	13	40.7	10.7		
35- School Mates	n	36	35	37	30	107	25	2.215	-2.914
	%	13.3	13	13.7	11.1	39.6	9.3		
36- Friends	n	56	32	34	35	87	26	2.470	-0.283
	%	20.7	11.9	12.6	13	32.2	9.6		
37- People Working in the Occupation	n	65	31	38	25	86	25	2.589	0.827
	%	24.1	11.5	14.1	9.26	31.9	9.3		
38- Vocational Teachers	n	41	20	39	23	107	40	2.056	-4.362
	%	15.2	7.4	14.4	8.5	39.6	14.8		
39- Others	n	3	0	3	2	15	247	0.159	-58.040
	%	1.1	0	1.1	0.7	5.6	91.5		

Note: The t-value at 269 df and 0.05 level is 1.645,(*) is significant at 0.05 level

Table XIV illustrates frequency count, percentages, and weighted average response of ATC students to people influencing their choice of programs. The t-tests for "parents," "people working in the occupation," friends," and "brothers/sisters" yielded the values of 13.219, 5.727, 4.966, and 4.520, respectively. These values were significant at the .05 level. Data presented in this table indicated that the weighted average response for "parents" was in the great influence range, while they were in the moderate influence range for the other three significant factors. The t-tests for the other eight factors indicated that none of them was a significant factor influencing ATC students' choice of their programs.

Table XV illustrates the weighted average and the rank order of students' responses to "people" influencing students' choice of their programs according to educational category. The Kruskal-Wallis test yielded an H-value of 2.302 which was found not significant at the .05 level, and thus there was no significant difference among the groups according to the educational category concerning the rank of people influencing student's choice of their programs.

Table XVI illustrates the weighted average, and the rank order of students' responses to "people" influencing students' choice of their programs according to training programs. The Kruskal-Wallis test yielded an H-value of 0.453 which was not significant at the .05 level, and thus there was no significant difference among the groups according to the training programs concerning the rank of people influencing students' choice of their programs.

TABLE XIV

PEOPLE INFLUENCING ATC STUDENTS' CHOICE OF THEIR TRAINING PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

People		Amount of Influence: Very Great 5	Great 4	Moder-ate 3	Little 2	Very Little 1	Does not Apply 0	Weighted Average Respone $\bar{X}$	t-value
28- Parents	n	102	28	76	13	22	4	3.665	13.219 (*)
	%	41.6	11.4	31	5.3	9	1.6		
29- Brothers/ Sisters	n	52	36	69	29	50	9	2.935	4.520 (*)
	%	21	14.7	28.2	11.8	20.4	3.7		
30- Relatives	n	27	29	60	41	75	13	2.400	-1.086
	%	11	11.8	24.5	16.7	30.6	5.3		
31- School counselor	n	23	9	22	22	118	56	1.527	-10.176
	%	9.4	3.7	9	9	46.1	22.9		
32- School Principal	n	18	13	33	32	139	14	1.796	-8.323
	%	7.4	5.3	13.5	13.1	55.1	5.7		
33- Academic Teacher	n	12	17	42	45	108	21	1.845	-7.968
	%	4.9	6.9	17.1	18.4	44.1	8.6		
34- School Graduates	n	35	27	46	34	94	9	2.380	-1.240
	%	14.3	11.	18.8	13.9	38.4	3.7		
35- School mates	n	27	37	60	44	69	8	2.531	0.341
	%	11.	15.1	24.5	18	28.2	3.3		
36- Friends	n	52	41	63	32	51	6	2.971	4.966 (*)
	%	21.2	16.7	25.7	13.1	20.8	2.5		
37- People Working in the Occupation	n	72	33	55	25	50	10	3.090	5.727 (*)
	%	29.4	13.5	22.5	10.2	20.4	4.1		
38- Vocational Teachers	n	33	26	59	31	79	17	2.396	-1.067
	%	13.5	10.6	24.1	12.7	32.2	6.9		
39- Others	n	6	0	3	1	8	227	0.200	-42.01
	%	2.5	0	1.2	0.4	3.3	92.7		

Note : The t-value at 244 df and 0.05 level is 1.645,(*)is significant at 0.05 level.

TABLE XV

WEIGHTED AVERAGE AND RANK ORDER OF STUDENTS' RESPONSES TO "PEOPLE" INFLUENCING THE CHOICE OF THEIR PROGRAMS ACCORDING TO EDUCATIONAL CATEGORY

	Educational Category							
	ISS		TTC		ATC		Total	
People	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	Grand $\bar{X}$	Rank
28- Parents	3.314	35	3.033	33	3.665	36	3.327	12
29- Brothers/Sisters	2.592	29	2.600	30	2.935	31	2.701	11
30- Relatives	2.191	19	2.107	17	2.400	24	2.227	7
31- School Counselor	0.639	4	0.870	5	1.527	9	0.992	2
32- School Principal	1.375	6	1.481	7	1.796	12	1.542	3
33- Academic Teachers	1.733	11	1.493	8	1.845	13	1.686	4
34- School Graduates	2.043	15	2.130	18	2.380	22	2.177	6
35- School Mates	1.993	14	2.215	20	2.531	27	2.235	8
36- Friends	2.422	25	2.470	26	2.971	32	2.609	9
37- People Working in the Occupation	2.285	21	2.589	28	3.090	34	2.638	10
38- Vocational Teachers	1.726	10	2.056	16	2.396	23	2.045	5
39- Others	0.177	2	0.159	1	0.200	3	0.178	1
GRAND $\bar{X}$	1.874		1.934		2.311		2.030	
T = ΣR		191		209		266		
N	12		12		12			

Kruskal-Wallis H value = 2.302, $(*)^2$ at 0.05 level and 2 df is 5.991

TABLE XVI

WEIGHTED AVERAGE AND RANK ORDER OF STUDENTS' RESPONSES TO "PEOPLE" INFLUENCING STUDENTS CHOICE OF THEIR PROGRAMS ACCORDING TO TRAINING PROGRAM

People	Training Program									
	Electrical		Automechanics		Central Heating		Welding		Carpentry	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
28- Parents	3.363	59	3.263	56	3.431	60	3.272	57	3.321	58
29- Brothers/Sisters	2.684	50	2.825	55	2.540	43	2.662	48	2.759	54
30- Relatives	2.339	38	2.281	34	2.117	26	2.232	32	2.142	27
31- School Counselor	0.848	7	1.009	8	1.015	9	1.225	10	0.796	6
32- School Principal	1.480	13	1.573	15	1.372	12	1.725	18	1.556	14
33- Academic Teachers	1.667	17	1.848	20	1.314	11	1.980	23	1.574	16
34- School Graduates	2.058	25	2.146	28	1.964	22	2.371	39	2.333	36.5
35- School Mates	2.193	31	2.333	36.5	2.190	30	2.159	29	2.284	35
36- Friends	2.573	45.5	2.538	42	2.569	44	2.669	49	2.698	51
37- People Working in the Occupation	2.632	47	2.573	45.5	2.752	52	2.755	53	2.506	41
38- Vocational Teachers	1.749	19	1.883	21	2.248	33	2.411	40	2.019	24
39- Others	0.175	3	0.216	4	0.255	5	0.166	2	0.086	1
Grand $\bar{X}$	1.980		2.048		1.980		2.135		2.006	
$T = \Sigma R$		354.5		365		347		400		363.5
n	12		12		12		12		12	

Kruskal-Wallis H value = 0.453, (χ^2) at 0.05 level and 4 df is 9.487

Sources of Information Influencing Students' Choice of Programs

Objective Two: To determine which sources of information influence a student's decision to select his program. Questions 40 through 45 asked for student's perception of the influence of selected sources of information on his decision to chooose his training program.

Table XVII illustrates frequency count, percentages, and weighted average response of all students to sources of information as influencing factors to choose their training programs. The t-tests for the six factors yielded negative values which indicated that none of the sources of information factors had a significant influence on students' decision in choosing their programs.

Table XVIII illustrates frequency count, percentages, and weighted average response of ISS students to sources of information influencing their choice of programs. The t-tests for the six factors yielded negative values, which indicated that none of the sources of information factors had a significant influence on ISS students in choosing their programs.

Table XIX illustrates frequency count, percentages, and weighted average response of TTC students to sources of information influencing their choice of programs. The t-tests for the six factors yielded negative values which indicated that none of the sources of information factors had a significant influence on TTC students in choosing their programs.

Table XX illustrates frequency count, percentages, and weighted average response of ATC students to sources of information influencing their choice of programs. The t-test for "prevocational education"

TABLE XVII

SOURCES OF INFORMATION INFLUENCING ALL STUDENTS' CHOICE OF THEIR TRAINING PROGRAM IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Sources of Information		Amount of Influence						Weighted Average Responce	t- Value
		Very Great 5	Great 4	Moder -ate 3	Little 2	Very Little 1	Does not Apply 0	($\bar{X}$)	
40 - Prevocational Education	n	105	69	143	133	259	84	2.216	-5.133
	%	13.2	8.7	18.1	16.8	32.7	10.5		
41- Vocational Guide Book	n	65	20	47	54	296	310	1.199	-24.688
	%	8.2	2.5	5.9	6.8	37.4	39.1		
42- Articles in Newspapers or Magazines Related to the Program	n	85	58	101	129	252	167	1.856	-11.471
	%	10.7	7.3	12.8	16.3	31.8	21.1		
43- Radio or TV Programs on Career Education	n	78	64	121	120	258	151	1.903	-10.749
	%	9.8	8.1	15.3	15.2	32.6	19.1		
44- Films Viewed on Training Facilities	n	36	36	61	76	327	256	1.245	-26.279
	%	4.5	4.5	7.8	9.6	41.3	32.3		
45- Visiting Workshop at School/Center/Factory	n	104	59	77	53	258	242	1.703	-12.828
	%	13.1	7.4	9.7	6.6	32.6	30.6		

Note: The t- value at 791 df and a = 0.05 is 1.645,(*)significant at 0.05 level

TABLE XVIII

SOURCES OF INFORMATION INFLUENCING ISS STUDENTS' CHOICE OF THEIR PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Sources of Information		Amount of Influence: Very Great 5	Great 4	Moder-ate 3	little 2	Very little 1	Does not Apply 0	Weighted Average Response ($\bar{X}$)	t- Value
40-Prevocational Education	n	29	25	45	55	91	32	2.097	-4.461
	%	10.5	9	16.3	19.9	32.6	11.6		
41-Vocational Guide Book	n	7	2	10	17	120	121	0.819	-26.873
	%	2.5	0.7	3.6	6.1	43.3	43.7		
42-Articles in Newspapers or Magazines Related to the Program	n	15	21	43	59	79	60	1.751	-8.723
	%	5.4	7.6	15.5	31.3	28.5	21.7		
43-Radio or TV Programs on Career Education	n	15	29	46	59	74	54	1.881	-7.090
	%	5.4	10.5	16.6	21.3	26.7	19.5		
44- Films Viewed on Training Facilities	n	5	5	25	29	108	105	1.032	-21.424
	%	1.8	1.8	9	10.5	39	37.9		
45- Visiting Workshops at School/Center/Factory	n	43	26	38	22	67	81	1.964	-4.888
	%	15.5	9.4	13.7	7.9	24.2	29.2		

Note: The t-value at 276 df and 0.05 level is 1.645,(*) is significant at 0.05 the level

TABLE XIX

SOURCES OF INFORMATION INFLUENCING TTC STUDENTS' CHOICE OF THEIR PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Sources of Information		Amount on Influence: Very Great 5	Great 4	Moder-ate 3	little 2	Very Little 1	Does not Apply 0	Weighted Average Response ($\bar{x}$)	t-value
40-Prevocational Education	n	33	15	35	45	98	44	1.919	-6.081
	%	12.2	5.6	13	16.7	36.3	16.3		
41-Vocational Guide Book	n	22	3	11	15	85	134	1.000	-16.903
	%	8.2	1.1	4.1	5.6	31.5	49.6		
42-Articles in Newspapers or Magazines related to the Program.	n	20	13	24	35	85	93	1.404	-11.894
	%	7.4	4.8	8.9	13	31.5	34.4		
43-Radio or TV Programs on Carrer Education	n	22	14	38	26	92	78	1.570	-9.286
	%	8.2	5.2	14.1	9.6	34.1	28.9		
44-Films viewed on Training Facilities	n	16	12	22	18	92	110	1.193	-14.758
	%	5.9	4.4	8.2	6.7	34.1	40.7		
45-Visiting Workshops at School/ Center/ Factory.	n	29	17	13	10	84	117	1.319	-11.485
	%	10.7	6.3	4.8	3.7	31.1	43.3		

Note: the t-value at 269 df and 0.05 level is 1.645, (*) is significant at 0.05 level

TABLE XX

SOURCES OF INFORMATION INFLUENCING ATC STUDENTS' CHOICE OF THEIR PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Sources of Information		Amount on Influence: Very Great 5	Great 4	Moder-ate 3	little 2	Very Little 1	Does not Apply 0	Weighted Average Response ($\bar{x}$)	t-value
40-Prevocational Education	n	43	29	63	33	70	7	2.678	1.848 (*)
	%	17.6	11.8	25.7	13.5	28.6	2.9		
41-Vocational Guide Book	n	36	15	26	22	91	55	1.849	-5.951
	%	14.7	6.1	10.6	9	37.1	22.5		
42-Articles in Newspapers or Magazines related to the Program.	n	50	24	34	35	88	14	2.473	-0.251
	%	20.4	9.8	13.9	14.3	35.9	5.7		
43-Radio or TV Programs on Carrer Education	n	41	21	37	35	92	19	2.294	-1.997
	%	16.7	8.6	15.1	14.3	37.6	7.8		
44-Films viewed on Training Facilities	n	15	19	14	29	127	41	1.543	-10.855
	%	6.1	7.8	5.7	11.8	51.8	16.7		
45-Visiting Workshops at School/Center/Factory	n	32	16	26	20	107	44	1.833	-6.380
	%	13.1	6.5	10.6	8.2	43.7	18		

Note: the t-value at 244 df and 0.05 level is 1.645,(*)is significant at 0.05 level

yielded a value of 1.848 which was significant at the .05 level. Data indicated that the weighted average response was in the moderate influence range. The t-tests for all other factors yielded negative values which indicated that none had significant influence on ATC students in choosing their programs.

Table XXI illustrates the weighted average and the rank order of student responses to sources of information as factors influencing students' choice of their programs according to educational category. The Kruskal-Wallis test yielded an H-value of 4.994 which was not significant at the .05 level, thus there was no significant difference among the groups according to educational category concerning the rank of sources of information as factors influencing students' choice of their programs.

Table XXII illustrates the weighted average and the rank order of student responses to sources of information as factors influencing students' choice of their programs according to training programs. The Kruskal-Wallis test yielded an H-value of 2.170 which was not significant at the .05 level thus there was no significant difference among the groups according to their training programs concerning the rank of sources of information as factors influencing students' choice of their programs.

Economic Factors Influencing Students' Choice of Programs

Objective Three: To determine which economic factors influence student's decision to select his program. Questions 46 through 50 asked for student's perception of the influence of selected economic factors on

TABLE XXI

WEIGHTED AVERAGE AND RANK ORDER OF STUDENT RESPONSES TO "SOURCES OF INFORMATION" INFLUENCING THEIR CHOICE OF PROGRAMS ACCORDING TO EDUCATIONAL CATEGORY.

Sources of Information	Educational Category						Total	
	ISS		TTC		ATC			
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	Grand $\bar{X}$	Rank
40-Prevocational Education	2.097	15	1.919	13	2.678	18	2.216	6
41-Vocational Guide Book	0.819	1	1.000	2	1.849	11	1.199	1
42-Articles in Newspapers or Magazines related to the Program.	1.751	9	1.404	6	2.473	17	1.856	4
43-Radio or TV Programs on Carrer Education	1.881	12	1.570	8	2.294	16	1.903	5
44-Films viewed on Training Facilities	1.032	3	1.193	4	1.543	7	1.245	2
45-Visiting Workshops at School/Center/Factory	1.964	14	1.319	5	1.833	10	1.703	3
Grand $\bar{X}$	1.591		1.401		2.111		1.687	
$T = \sum R$		54		38		79		
n	6		6		6			

Kruskal-Wallis H value = 4.994, $(X)^2$ at 0.05 level and 2 df is 5.991

TABLE XXII

WEIGHTED AVERAGE AND RANK ORDER OF STUDENT RESPONSES TO "SOURCES OF INFORMATION" INFLUENCING THEIR CHOICE OF PROGRAMS ACCORDING TO TRAINING PROGRAM.

Sources of Information	TRAINING PROGRAM									
	Electrical		Automechanics		Central Heating		Welding		Carpentry	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
40- Prevocational Education	1.988	22	2.251	27	2.080	26	2.285	28	2.469	30
41- Vocational Guide Book	1.268	6	1.456	10	1.109	5	1.099	3	1.031	1
42- Articles in Newspaper, Magazine related to the Program.	1.737	16	1.895	20	1.562	12	2.318	29	1.759	17.5
43- Radio or TV Program on Career occupation	1.977	21	2.023	24	1.577	13	2.053	25	1.833	19
44 - Films viewed on Training Facilities.	1.310	7.5	1.310	7.5	1.095	2	1.384	9	1.105	4
45 - Visiting Workshops at School/ Factory.	1.626	14	1.520	11	1.759	17.5	2.007	23	1.648	15
Grand $\bar{X}$	1.650		1.742		1.530		1.858		1.611	
$T = \Sigma R$		86.5		99.5		75.5		117		86.5
n	6		6		6		6		6	

Kruskal-Wallis H value = 2.170, (χ^2) at 0.05 level and 4 df is 9.487

his decision to choose his training program.

Table XXIII illustrates frequency count, percentages, and weighted average response of all students to economic factors as influencing factors to choose their training programs. The t-tests for the two factors: "work availability after graduation" and "earning potential after graduation" yielded values of 33.386 and 21.588, respectively. These values were significant at the .05 level. The weighted average responses for these two factors were in the great and moderate range of influence respectively. The t-test for the other three factors yielded negative values which indicated that none had significant influence on student's choice of their programs.

Table XXIV illustrates frequency count, percentages, and weighted average response of ISS students to economic factors influencing their choice of programs. The t-tests for "work availability after graduation" and "earning potential after graduation" yielded values of 19.160 and 15.875, respectively. These values were significant at the .05 level. The weighted average responses for these two significant factors were in the great range of influence. The t-tests for the other three economic factors yielded negative values indicating that none had significant influence on ISS students in choosing their programs.

Table XXV illustrates frequency count, percentages, and weighted average response of TTC students to economic factors influencing their choice of programs. The t-tests for "work availability after graduation" and "earning potential after graduation" yielded values of 13.617 and 8.054, respectively. These values were significant at the .05 level. The weighted average responses for these two significant factors were in the great and moderate influence ranges respectively. The t-tests for

TABLE XXIII

ECONOMIC FACTORS INFLUENCING ALL STUDENTS CHOICE OF THEIR TRAINING PROGRAM IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Economic Factors		Amount of Response						Weighted Average Response ($\bar{X}$)	t-value
		Very Great 5	Great 4	Moder-ate 3	little 2	very Little 1	Does not Apply 0		
46 - Availability of Boarding Facilities	n	39	10	36	18	102	587	0.607	-40.917
	%	4.9	1.3	4.5	2.3	12.9	74.1		
47 - Wages Earned During Training	n	38	24	86	53	78	513	0.919	-30.104
	%	4.8	3	10.9	6.7	9.8	64.8		
48 - Partial Employment Possibility Outside School Time	n	92	54	96	121	284	145	1.881	-10.977
	%	11.6	6.8	12.1	15.3	35.9	18.3		
49- Work Availability after Graduation	n	391	165	135	43	54	4	3.990	33.386(*)
	%	49.4	20.8	17.1	5.4	6.8	0.5		
50- Earning Potential After Graduation	n	196	222	232	56	76	10	3.475	21.588 (*)
	%	24.7	28	29.3	7.1	9.6	1.3		

Note: the t-value at 791 df and a = 0.05 is 1.645, (*)is significant at 0.05 level

TABLE XXIV

ECONOMIC FACTORS INFLUENCING ISS STUDENTS' CHOICE OF THEIR PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Economic Factors		Amount of Influence: Very Great 5	Great 4	Moderate 3	Little 2	Very Little 1	Does not Apply 0	Weighted Average Response ($\bar{X}$)	t-value
46- Availability of Boarding Facilities	n	8	6	17	10	73	163	0.751	-24.007
	%	2.9	2.2	3.6	3.6	26.4	58.8		
47- Wages Earned During Training	n	1	0	1	1	5	269	.054	-104.042
	%	0.4	0	0.4	0.4	1.8	97.1		
48- Partial Employment Possibility Outside School Time.	n	21	25	37	43	118	33	1.877	-7.201
	%	7.6	9	13.4	15.5	42.6	11.9		
49- Work Availability After Graduation	n	125	62	56	15	17	2	3.928	19.160 (*)
	%	45.1	22.4	20.2	5.4	6.1	0.7		
50- Earning Potential After Graduation	n	75	83	78	23	16	2	3.621	15.875 (*)
	%	27.1	30	28.2	8.3	5.8	0.7		

Note: the t-value at 276 df and a = 0.05 is 1.645,(*)is significant at 0.05 level

TABLE XXV

ECONOMIC FACTORS INFLUENCING TTC STUDENTS' CHOICE OF THEIR PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Economic Factors		Amount of Influence						Weighted Average Response ($\bar{X}$)	t-value
		Very Great 5	Great 4	Moderate 3	Little 2	Very Little 1	Does not Apply 0		
46- Availability of Boarding Facilities	n	31	4	15	6	20	194	0.919	-15.162
	%	11.5	1.5	5.6	2.2	7.4	71.9		
47- Wages Earned During Training	n	1	1	5	9	12	242	0.200	-55.844
	%	0.4	0.4	1.9	3.3	4.4	89.6		
48- Partial Employment Possibility Outside School time.	n	47	14	25	29	48	107	1.748	-6.530
	%	17.4	5.2	9.3	10.7	17.8	39.6		
49- Work Availability After Graduation	n	114	50	50	21	33	2	3.685	13.617 (*)
	%	42.2	18.5	18.5	7.8	12.2	0.7		
50- Earning Potential After Graduation	n	64	64	71	16	48	7	3.219	8.054 (*)
	%	23.7	23.7	26.3	5.9	17.8	2.6		

Note: the t-value at 269 df and a =0.05 is 1.645 (*)is significant at 0.05 level

the other three economic factors yielded negative values which indicated that none had significant influence on TTC students in choosing their programs.

Table XXVI illustrates frequency count, percentages, and weighted average response of ATC students to economic factors influencing their choice of programs. The t-tests for the three factors "work availability after graduation," "earning potential after graduation," and wages earned during training" yielded values of 32.250, 15.644, and 2.191, respectively. These values were significant at the .05 level. Data presented in this table indicated that the weighted average responses for the first two significant factors were in the great range of influence, while it was in the moderate influence range for the third factor. The t-tests for the other two factors yielded negative values which indicated that none had significant influence on ATC students in choosing their programs.

Table XXVII illustrates the weighted average response and the rank order of students' responses to economic factors influencing students' choice of their programs according to educational category. The Kruskal-Wallis test yielded an H-value of 0.380 which was not significant at the .05 level; thus there was no significant difference among the groups according to educational category concerning the rank of economic factors influencing students' choice of their programs.

Table XXVIII illustrates the weighted average and the rank order of students responses to economic factors influencing students' choice of their programs according to training programs. The Kruskal-Wallis test yielded an H-value of 0.295 which was not significant at the .05 level; thus there was no significant difference among the groups according to

TABLE XXVI

ECONOMIC FACTORS INFLUENCING ATC STUDENTS' CHOICE OF THEIR PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Economic Factors		Amount of Influence: Very Great 5	Great 4	Moderate 3	Little 2	Very Little 1	Does not Apply 0	Weighted Average Response ($\bar{X}$)	t-value
46- Availability of Boarding Facilities	n	0	0	4	2	9	230	0.102	-82.546
	%	0	0	1.6	0.8	3.7	93.9		
47- Wages Earned During Training	n	36	23	80	43	61	2	2.690	2.191 (*)
	%	14.7	9.4	32.7	17.6	24.9	0.8		
48- Partial Employment Possibility Outside School time.	n	24	15	34	49	118	5	2.033	-5.400
	%	9.8	6.1	13.9	20	48.2	2		
49- Work Availability After Graduation	n	152	53	29	7	4	0	4.396	32.250 (*)
	%	62	21.6	11.8	2.9	1.6	0		
50- Earning Potential After Graduation	n	57	75	83	17	12	1	3.592	15.644 (*)
	%	23.3	30.6	33.9	6.9	4.9	0.4		

Note: The t-Value at 244 df and a =0.05 is 1.645,(*)is significant at 0.05 level

TABLE XXVII

WEIGHTED AVERAGE AND RANK ORDER OF STUDENTS RESPONSES TO "ECONOMIC FACTORS" INFLUENCING THEIR CHOICE OF PROGRAM ACCORDING TO EDUCATIONAL CATEGORY

Economic Factors	Educational Category						Total	
	ISS		TTC		ATC			
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	Grand $\bar{X}$	Rank
46- Availability of Boarding Facilities	0.751	4	0.919	5	0.102	2	0.607	1
47- Wages Earned During Training	0.054	1	0.200	3	2.690	9	0.919	2
48- Partial Employment Possibility Outside School time.	1.877	7	1.748	6	2.033	8	1.881	3
49- Work availability after Graduation	3.928	14	3.685	13	4.396	15	3.990	5
50- Earning Potential after Graduation	3.621	12	3.219	10	3.592	11	3.475	4
Grand $\bar{X}$	2.046		1.954		2.563		2.174	
$T = \Sigma R$		38		37		45		
n	5		5		5			

Kruskal-Wallis H value = 0.380, (χ^2) at 0.05 level and 2 df is 5.991

TABLE XXVIII

WEIGHTED AVERAGE AND RANK ORDER OF STUDENTS RESPONSES TO "ECONOMIC FACTORS" INFLUENCING THEIR CHOICE OF PROGRAM ACCORDING TO TRAINING PROGRAM

Economic Factors	Training Program									
	Electrical		Automechanic		Central Heating		Welding		Carpentry	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
46- Availability of Boarding Facilities	0.269	1	0.491	2	0.839	6	0.887	7	0.630	3
47- Wages Earned During Training	0.731	4	0.965	8	0.825	5	1.073	10	1.006	9
48- Partial Employment Possibility Outside School time.	1.982	14	2.082	15	1.810	12	1.861	13	1.642	11
49- Work Availability after Graduation	3.959	23	4.035	24	4.197	25	3.854	21	3.926	22
50- Earning Potential after Graduation	3.363	16	3.509	19	3.715	20	3.404	17	3.420	18
Grand $\bar{X}$	2.061		2.216		2.277		2.216		2.125	
$T = \Sigma R$		58		68		68		68		63
n	5		5		5		5		5	

Kruskal-Wallis H value = 0.295, (χ^2) at 0.05 level and 4 df is 9.487

the training programs concerning the rank of economic factors influencing students' choice of their programs.

Personal and General Factors Influencing Students' Choice of Programs

Objective Four: To determine which personal and general factors influence student's decision to select his program. Questions 51 through 57 asked for student's perception of the influence of selected personal and general factors on his decision to choose his training program.

Table XXIX illustrates frequency count, percentages, and weighted average response of all students to personal and general factors as to their influence in choosing a training program. The t-test for the factors "interest in the program," "reputation of faculty and institution," and "low grades in math and science" yielded values of 29.271, 16.363, and 2.250, respectively. These values were significant at the .05 level. Data presented in this table revealed that the weighted average response for "interest in the program" was in the great influence range, while for the other two factors they were in the moderate influence range. The t-test for other factors indicated that they had no significant influence on students' decision in choosing their programs.

Table XXX illustrates frequency count, percentages, and weighted average response of ISS students to personal and general factors influencing their choices of programs. The t-tests for the factors "interest in the program," "reputation of faculty and institution," and "low grades in math and science" yielded values of 16.495, 6.599, and 2.027, respectively. These values were significant at the .05 level.

TABLE XXIX

PERSONAL AND GENERAL FACTORS INFLUENCING ALL STUDENTS' CHOICE OF THEIR TRAINING PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Personal and General Factors		Amount of Influence: Very Great 5	Great 4	Moderate 3	Little 2	Very Little 1	Does not Apply 0	Weighted Average Response ($\bar{X}$)	t-value	
51- Interest in the Program	n	420	140	104	40	78	10	3.952	29.271	(*)
	%	53	17.7	13.1	5.1	9.8	1.3			
52- Work Experience in the Field of Your Program	n	74	43	117	125	287	146	1.808	-12.790	
	%	9.3	5.4	14.8	15.8	36.2	18.4			
53- Low Grades in Math and Science	n	103	78	291	104	162	54	2.614	2.250	(*)
	%	13	9.8	36.7	13.1	20.5	6.9			
54- Facility Equipment	n	131	122	156	97	231	55	2.571	1.252	
	%	16.5	15.4	19.7	12.2	29.2	7			
55- Reputation of Faculty and Institution	n	267	163	148	71	117	26	3.396	16.363	(*)
	%	33.7	20.6	18.7	9	14.8	3.2			
56- Home Closeness to School	n	72	67	128	122	332	72	1.999	- 9.751	
	%	9	8.4	16.2	15.4	41.9	9.1			
57- Father's Occupation	n	24	17	57	80	459	155	1.235	-32.334	
	%	3	2.1	7.2	10.1	58	19.6			

Note: the t-Value at 791 df and a = 0.05 is 1.645,(*)is significant at 0.05 level

TABLE XXX

PERSONAL AND GENERAL FACTORS INFLUENCING ISS STUDENTS' CHOICE OF THEIR TRAINING PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Personal and General Factors		Amount of Influence: Very Great 5	Great 4	Moderate 3	Little 2	Very Little 1	Does not Apply 0	Weighted Average Response ($\bar{X}$)	t-value
51- Interest in the Program	n	151	44	32	14	34	2	3.931	16.495 (*)
	%	54.5	15.9	11.6	5.1	12.3	0.7		
52- Work Experience in the Field of your program	n	22	13	39	51	104	47	1.757	-8.349
	%	8	4.7	14.1	18.5	37.7	17		
53- Low Grades in Math and Science	n	41	20	107	41	52	16	2.671	2.027 (*)
	%	14.8	7.2	38.6	14.8	18.8	5.8		
54- Facility Equipment	n	34	38	52	38	82	33	2.296	-2.132
	%	12.3	13.7	18.8	13.7	29.6	11.9		
55- Reputation of Faculty and Institution	n	62	63	66	30	40	16	3.105	6.599 (*)
	%	22.4	22.7	23.8	10.8	14.4	5.8		
56- Home Closeness to School	n	27	20	44	42	111	33	1.957	-6.085
	%	9.8	7.2	15.9	15.2	40.1	11.9		
57- Father's Occupation	n	6	5	24	31	151	60	1.209	-20.079
	%	2.2	1.8	8.7	11.2	54.5	21.7		

Note: the t-value at 276 df and a = 0.05 is 1.645,(*) is significant at 0.05 level

Data presented in this table indicated that the weighted average response for the first significant factor was in the great influence range, while responses were in the moderate influence range for the other two significant factors. The t-test for other factors indicated that none had significant influence on ISS students' decisions in choosing their programs.

Table XXXI illustrates frequency count, percentages, and weighted average response of TTC students to personal and general factors influencing their choice of programs. The t-test for the factors "interest in the program" and "reputation of faculty and institution" yielded values of 13.736 and 8.994 which were significant at the .05 level. Data presented in this table indicated that the weighted average responses for these two factors were in the great and moderate range of influence respectively. The t-test for other factors indicated that they had no significant influence on TTC students' decisions in choosing their programs.

Table XXXII illustrates frequency count, percentages, and weighted average response of ATC students to personal and general factors influencing their choice of programs. The t-test for the factors "interest in the program," "reputation of faculty and institution," "low grades in math and science," and "facility equipment" yielded values of 22.824, 14.036, 7.658, and 3.807, respectively. These values were significant at the .05 level. Data revealed that the weighted average responses for "interest in the program" and "reputation of faculty and institution" were in the great range of influence, while they were in the moderate range of influence for "low grades in math and science" and "facility equipment" as influencing factors. The t-test for the other

TABLE XXXI

PERSONAL AND GENERAL FACTORS INFLUENCING TTC STUDENTS' CHOICE OF THEIR PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Personal and General Factors		Amount of Influence: Very Great 5	Great 4	Moderate 3	Little 2	Very Little 1	Does not Apply 0	Weighted Average Response ($\bar{X}$)	t-value
51- Interest in the Program	n	135	43	38	14	32	8	3.871	13.736 (*)
	%	50	15.9	14.1	5.2	11.9	3		
52- Work Experience in the Field of Your Program	n	27	17	35	33	82	76	1.689	-8.228
	%	10	6.3	13	12.2	30.4	28.1		
53- Low Grades in Math and Science	n	34	23	59	33	83	38	2.178	-3.322
	%	12.6	8.5	21.9	12.2	30.7	14.1		
54- Facility Equipment	n	49	43	45	32	82	19	2.585	0.853
	%	18.2	15.9	16.7	11.9	30.4	7		
55- Reputation of Faculty and Institution	n	113	36	37	26	49	9	3.411	8.994 (*)
	%	41.9	13.3	13.7	9.6	18.2	3.3		
56- Home Closeness to School	n	23	22	41	26	125	33	1.863	-7.080
	%	8.5	8.2	15.2	9.6	46.3	12.2		
57- Father's Occupation	n	8	4	17	25	140	76	1.100	-20.760
	%	3	1.5	6.3	9.3	51.9	28.1		

Note : the t-value at 269 df and a = 0.05 is 1.645, (*) is significant at 0.05 level

TABLE XXXII

PERSONAL AND GENERAL FACTORS INFLUENCING ATC STUDENTS' CHOICE OF THEIR TRAINING PROGRAMS IN FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED AVERAGE RESPONSE

Personal and General Factors		Amount of Influence: Very Great 5	Great 4	Moderate 3	Little 2	Very Little 1	Does not Apply 0	Weighted Average Response ($\bar{X}$)	t-value	
51- Interest in the Program	n	134	53	34	12	12	0	4.163	22.824	(*)
	%	54.7	21.6	13.9	4.9	4.9	0			
52- Work Experience in the Field of Your Program	n	25	13	43	41	101	22	1.996	-5.463	
	%	10.2	5.3	17.6	16.7	41.2	9			
53- Low Grades in Math and Science	n	28	35	125	30	27	0	3.029	7.658	(*)
	%	11.4	14.3	51	12.2	11	0			
54- Facility Equipment	n	48	41	59	27	67	3	2.865	3.807	(*)
	%	19.6	16.7	24.1	11	27.4	1.2			
55- Reputation of Faculty and Institution	n	92	64	45	15	28	1	3.710	14.036	(*)
	%	37.6	26.1	18.4	6.1	11.4	0.4			
56- Home Closeness to School	n	21	25	43	54	96	6	2.196	-3.534	
	%	8.6	10.2	17.6	22	39.2	2.6			
57- Father's Occupation	n	10	8	16	24	168	19	1.412	-15.423	
	%	4.1	3.3	6.5	9.8	68.6	7.8			

Note : the t-value at 244 df and a = 0.05 is 1.645, (*)is significant at 0.05 level

factors indicated that they had no significant influence on ATC students' decisions in choosing their programs.

Table XXXIII illustrates the weighted average response and the rank order of students' responses to "personal and general factors" influencing all students' choice of their programs according to educational category. The Kruskal-Wallis test yielded an H-value of 0.868 which was not significant at the .05 level. Thus there was no significant difference among the groups according to educational category concerning the rank of "personal and general factors" influencing students' choice of their programs.

Table XXXIV illustrates the weighted average and the rank order of students' responses to "personal and general factors" influencing students' choice of their programs according to training programs. The Kruskal-Wallis test yielded an H-value of 0.351 which was not significant at the .05 level thus there was no significant difference among the groups according to the training programs concerning the rank of "personal and general factors" influencing students' choice of their programs.

Table XXXV illustrates the grand total weighted average and rank order of students' responses to the four group factors: "people," "sources of information," "economic factors," and "personal and general factors" influencing students' choice of their programs according to educational category. Data indicated that "personal and general factors" had the highest influence, and were followed in descending order by "economic factors," "people," and "sources of information." The grand total weighted average response for "personal and general factors" was in the moderate influence range, while they the other three group factors

TABLE XXXIII

WEIGHTED AVERAGE AND RANK ORDER OF STUDENTS' RESPONSES TO "PERSONAL AND GENERAL FACTORS" INFLUENCING STUDENTS CHOICE OF THEIR PROGRAMS ACCORDING TO EDUCATIONAL CATEGORY

Personal and General Factors	Educational Category: ISS $\bar{X}$	ISS Rank	TTC $\bar{X}$	TTC Rank	ATC $\bar{X}$	ATC Rank	Total Grand $\bar{X}$	Total Rank
51- Interest in the Program	3.931	20	3.781	19	4.163	21	3.952	7
52- Work Experience in the Field of Your Program	1.757	5	1.689	4	1.996	8	1.808	2
53- Low Grade in Math and Science	2.671	13	2.178	9	3.029	15	2.614	5
54- Facility Equipment	2.296	11	2.585	12	2.865	14	2.571	4
55- Reputation of Faculty and Institution	3.105	16	3.411	17	3.710	18	3.396	6
56- Home Closeness to School	1.957	7	1.863	6	2.196	10	1.999	3
57- Father's	1.209	2	1.100	1	1.412	3	1.235	1
Grand $\bar{X}$	2.418		2.372		2.767		2.511	
$T = \Sigma R$		74		68		89		
n	7		7		7			

Kruskal-Wallis H value = 0.868. $(*)^2$ at 0.05 level and 2 df is 5.991

TABLE XXXIV

WEIGHTED AVERAGE AND RANK ORDER OF STUDENTS' RESPONSES TO "PERSONAL AND GENERAL FACTORS" INFLUENCING STUDENTS' CHOICE OF THEIR PROGRAMS ACCORDINING TO TRAINING PROGRAM

Personal and General Factors	Training Program									
	Electrical		Automechanic		Central Heating		Welding		Carpentry	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
51- Interest in the Program	3.988	33	4.298	35	4.270	34	3.225	28	3.957	32
52- Work Experience in the field of Your Program	1.895	10	1.947	12	1.701	6	1.735	7	1.753	8
53- Low Grades in Math and Science	2.409	18	2.515	19	2.613	21	2.669	22	2.883	24
54- Facility Equipment	2.246	16	2.602	20	2.387	17	2.722	23	2.895	25
55- Reputation of Faculty and Institution	3.135	26	3.404	29	3.190	27	3.735	31	3.525	30
56- Home Closeness to School	1.795	9	1.994	13	2.109	14	2.225	15	1.914	11
Grand $\bar{X}$	2.378		2.597		2.486		2.509		2.585	
$T = \Sigma R$		115		133		120		130		132
n	7		7		7		7		7	

Kruskal-Wallis H value = 0.351, (χ^2) at 0.05 level and 4 df is 9.487

TABLE XXXV

GRAND TOTAL WEIGHTED AVERAGE AND RANK ORDER OF STUDENTS' RESPONSES TO THE FOUR GROUP FACTORS: PEOPLE, SOURCES OF INFORMATION, ECONOMIC FACTORS, AND PERSONAL AND GENERAL FACTORS INFLUENCING STUDENT'S CHOICE OF THEIR PROGRAMS ACCORDING TO EDUCATIONAL CATEGRORY

Factors	Educational Category							
	ISS		TTC		ATC		Total	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
- People	1.874	3	1.934	4	2.311	8	2.030	2
- Sources of Information	1.591	2	1.401	1	2.111	7	1.687	1
- Economic Factors	2.046	6	1.954	5	2.563	11	2.174	3
- Personal and General Factors	2.418	10	2.372	9	2.767	12	2.511	4
Grand $\bar{X}$	1.982		1.915		2.438		2.101	
$T = \Sigma R$		21		19		38		
n	4		4		4			

Kruskal-Wallis H value = 4.19, (χ^2) at 0.05 level and 2 df = 5.991

were in the little influence range. The Kruskal-Wallis test yielded an H-value of 4.19 which was not significant at the .05 level; thus there was no significant difference among the groups according to their educational category concerning the rank of the four group factors influencing students' choice of their programs.

Table XXXVI illustrates the grand total weighted average and rank order of students' responses to the four group factors: "people," "sopurces of information," "economic factors," and "personal and general factors" influencing students' choice of their programs according to their training programs. The Kruskal-Wallis test yielded an H-value of 0.957 which was not significant at the .05 level; thus there was no significant difference among the groups according to the training programs concerning the rank of the four group factors influencing students' choice of their programs.

Characteristics of Students

Introduction

In this section, selected characteristics of male students enrolling in industrial education and training are discussed. Part A of the survey instrument was placed at the beginning of the questionnaire to orient the student and help him in responding effectively to other parts. This part included questions one to 27. Some questions were not analyzed but were used to help gather information from student files in departments of education. Data obtained from part A were analyzed to meet Objective Five: To determine the general characteristics of students enrolling in industrial education and training. The characteristics discussed in this section are: demographic, educational and socioeconomic, and experiences

TABLE XXXVI

GRAND TOTAL WEIGHTED AVERAGE AND RANK ORDER OF STUDENTS' RESPONSES TO THE FOUR GROUP FACTORS: PEOPLE, SOURCES OF INFORMATION, ECONOMIC FACTORS, AND PERSONAL AND GENERAL FACTORS INFLUENCING STUDENTS' CHOICE OF THEIR PROGRAMS ACCORDING TO TRAINING PROGRAM

Factors	Training Program									
	Electrical		Automechanic		Central Heating		Welding		Carpentry	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
- People	1.980	6.5	2.048	9	1.980	6.5	2.135	12	2.006	8
- Source of Information	1.650	3	1.742	4	1.530	1	1.858	5	1.641	2
- Economic Factors	2.061	10	2.216	13.5	2.277	15	2.216	13.5	2.125	11
- Personal and General Factors	2.378	16	2.597	20	2.486	17	2.509	19	2.585	18
Grand $\bar{X}$	2.017		2.151		2.068		2.067		2.156	
$T = \Sigma R$		35.5		46.5		39.5		49.5		39
n	4		4		4		4		4	

Kruskal-Wallis H value = 0.957, (χ^2) at 0.05 level and 4 df = 9.487

of students.

Chi-square was used to test the relationship between students' characteristics and their educational categories or training programs. That is, it was used to determine if these characteristics are different or similar for students when they are grouped in educational categories or in training programs.

Demographic Characteristics

The demographic characteristics dealt with in this section are age and community size.

Age. Question two asked the student to indicate his age as of the first of September 1983, according to the mentioned age group classification. Table XXXVII illustrates frequency count and percentages of students' age in years according to their grade level and educational category. To test for relationship between students' age and educational categories, chi-square was calculated for grade 11 which was common to all educational categories. Calculations yielded a chi-square value of 35.34 which was significant at the .05 level; thus indicating that students had significant difference in average age among different educational categories.

Table XXXVIII illustrates frequency count and percentages of students' age in years according to their grade level and training program. Concerning the relationship between students' age and training program, calculation of chi-square for grade 11 yielded a value of 32.296 which was significant at the .05 level; thus indicating that students had a significant difference in their average age among different training programs.

TABLE XXXVII

STUDENTS' AGE IN FREQUENCY COUNT AND PERCENTAGES ACCORDING TO THEIR EDUCATIONAL CATEGORY AND GRADE LEVEL.

Students' Age (Years)		Educational Category						Total		
		ISS		TTC		ATC				
	Grade Level	11	12	10	11	10	11	10	11	12
1- Less than 16	n	11	1	61	4	71	4	132	19	1
	%	7.8	0.7	45.9	2.9	50	3.9	48	5	0.7
2- 16 +	n	81	9	53	76	49	35	102	192	9
	%	57.4	6.6	39.8	55.5	34.5	34	37.1	50.4	6.6
3- 17 +	n	39	79	9	31	16	46	25	116	79
	%	27.7	58	6.8	22.6	11.3	44.7	9.1	30.4	58.1
4- 18 +	n	9	39	10	19	4	13	14	41	32
	%	6.4	28.7	7.5	13.9	2.8	12.6	5.1	10.8	23.5
5- 19 +	n	1	15	0	7	2	3	2	11	15
	%	0.7	11	0	5.1	1.4	2.9	0.7	2.9	11
6 - Over 20	n	0	0	0	0	0	2	0	2	0
	%	0	0	0	0	0	1.9	0	0.5	0
TOTAL	N	141	136	133	137	142	103	275	381	136

Chi- square = 35.34; $(\chi)^2$ at 0.05 level and 10 df is 18.31

Note: Chi-square test is performed for grade level 11 which is common to all categories.

TABLE XXXVIII

STUDENTS'AGE IN FREQUENCY COUNT AND PERCENTAGES ACCORDING TO THEIR TRAINING PROGRAM AND GRADE LEVEL.

Students' Age (years)		Training Program														
		Electrical			Automechanics			Central Heating			Welding			Carpentry		
		10	11	12	10	11	12	10	11	12	10	11	12	10	11	12
1- Less than 16	n	34	4	1	34	1	0	25	5	0	21	6	0	18	3	0
	%	47.9	7	2.3	57.6	1.2	0	44.6	8.8	0	40.4	7.1	0	48.6	3.1	0
2- 16 +	n	26	29	3	20	54	3	23	24	1	20	43	2	13	42	0
	%	36.6	50.9	7	33.9	64.3	10.7	41.1	42.1	4.2	38.5	50.6	14.3	35.1	42.9	0
3- 17 +	n	8	16	24	4	17	19	5	22	9	6	26	9	2	35	18
	%	11.3	28	55.8	6.8	20.2	67.9	8.9	38.6	37.5	11.5	30.6	64.3	5.4	35.7	66.7
4- 18 +	n	3	6	12	0	5	4	2	5	10	5	9	1	4	16	5
	%	4.2	10.5	27.9	0	6	14.3	3.6	8.8	41.7	9.6	10.6	7.1	10.8	16.3	18.5
5- 19 +	n	0	2	3	1	5	2	1	1	4	0	1	2	0	2	4
	%	0	3.5	7	1.7	6	7.1	1.8	1.7	16.6	0	1.1	14.2	0	2	14.8
6- Over 20	n	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
	%	0	0	0	0	2.4	0	0	0	0	0	0	0	0	0	0
Total	N	71	57	43	59	84	28	56	57	24	52	85	14	37	98	27

Note: Chi-square = 32.296 , $(*)^2$ at 0.05 level and 20 df is 31.41

Chi-square test is performed for grade level 11 which is common to all programs.

Community Size. Question ten asked for the size of the town in which the student was living when he entered industrial education and training after the ninth grade. Table XXXIX illustrates frequency count and percentages of students in community sizes according to educational category and training program.

Concerning the relationship between students' community size and their educational categories, calculation of chi-square yielded a value of 79.22 which was significant at the .05 level; thus indicating that students in different educational categories came from communities with significantly different sizes. Testing for relationship between students' community size and their training programs, calculations of chi-square yielded a value of 23.94 which was not significant at the .05 level, indicating that students in different training programs came from communities of similar sizes.

Socioeconomic and Educational Characteristics

The students' socioeconomic and educational characteristics selected for study in this section were: students' academic standing, father's education, mother's education, family income, and head of household occupational title.

Students' Academic Standing. Data related to academic characteristics were obtained from student responses to question nine which asked for percentile rank in the ninth grade. These responses were checked by referring to files in departments of education. Table XL illustrates frequency count and percentages of students' percentile rank according to educational category and training program. The responses

TABLE XXXIX

COMMUNITY SIZE IN FREQUENCY COUNT AND PERCENTAGES ACCORDING TO (1) EDUCATIONAL CATEGORY AND (2) TRAINING PROGRAM.

Community Size		(1) Educational Category			(2)Training Program					Total
		ISS	TTC	ATC	Electrical	Automech-anic	Central Heating	Welding	Carpentry	
1- Below 2000	n	38	41	8	24	14	15	16	18	87
	%	13.7	15.2	3.3	14	8.2	10.9	10.6	11.1	11
2 - From 2001	n	64	36	22	25	32	20	20	25	122
to 5000	%	23.1	13.3	9	14.6	18.7	14.6	13.2	15.4	15.4
3-From 5001	n	32	51	16	21	16	23	25	14	99
to 20 000	%	11.6	18.9	6.5	12.3	9.4	16.8	16.6	8.6	12.5
4- From 20001	n	29	26	29	15	14	24	14	17	84
to 50000	%	10.5	9.6	11.8	8.8	8.2	17.5	9.3	10.5	10.6
5- Over 50000	n	114	116	170	86	95	55	76	88	400
	%	41.1	43	69.4	50.3	55.5	40.2	50.3	54.3	50.5
Total	N	277	270	245	171	171	137	151	162	792

(1)Chi-square = 79.22, $(*)^2$ at 0.05 level and 8 df = 15.51

(2)Chi-square = 23.94, $(*)^2$ at 0.05 level and 16 df = 26.29.

TABLE XL

NINTH GRADE STUDENTS' PERCENTILE RANK IN FREQUENCY COUNT AND PERCENTAGES ACCORDING TO: (1) - EDUCATIONAL CATEGORY AND (2)-TRAINING PROGRAM.

Percentile Rank		(1) Educational Category			(2) Training Program					Total
		ISS	TTC	ATC	Electrical	Automech-anics	Central Heating	Welding	Carpentry	
(1) 99 - 80	n	23	3	5	10	8	4	5	4	31
	%	8.3	1.1	2	5.8	4.7	2.9	3.3	2.5	3.9
(2) 79 - 60	n	62	29	7	15	33	22	9	19	98
	%	22.4	10.8	2.9	8.8	19.3	16.1	6	11.7	12.4
(3) 59 - 40	n	92	57	33	33	41	44	30	34	182
	%	33.2	21.1	13.5	19.3	42	32.1	19.9	21	23
(4) 39 - 20	n	81	70	89	54	47	32	47	60	240
	%	29.2	25.9	36.3	31.6	27.5	23.4	31.1	37	30.3
(5) 19 - 00	n	19	111	111	59	42	35	60	45	241
	%	6.9	41.1	45.3	34.5	24.5	25.5	39.7	27.8	30.4
Total	N	277	270	245	171	171	137	151	162	792

(1)Chi -Square = 168.12, $(*)^2$ at 0.05 level and 8 df = 15.51

(2)Chi-square = 39.00, $(*)^2$ 0.05 level and 16 df = 26.30.

were grouped into five equal ranges: 99-80, 79-60, 59-40, 39-20, and 19-00.

Concerning the relationship between educational category and student's percentile rank, chi-square calculations yielded a value of 168.12 which, with eight degrees of freedom, was significant at the .05 level. This indicated that students in different educational categories had significantly different percentile ranks. Testing for relationship between percentile rank and training program, chi-square calculations yielded a value of 39 with 16 degrees of freedom which was significant at the .05 level. This indicated that students in different training programs had significantly different percentile ranks.

Father's Education. Data used to analyze father's and mother's educational level were obtained from students' responses to question 11. Table XLI illustrates frequency count and percentages of father's educational level according to educational category and training program.

Testing for relationship between father's educational level and student's educational category, chi-square calculations yielded a value of 19.99 which, with 12 degrees of freedom, was not significant at the .05 level. This indicated that father's educational levels were similar for students in different educational categories.

Concerning relationship between training programs and father's educational level, the chi-square test yielded a value of 15.59 which, with 24 degrees of freedom, was not significant at the .05 level. This indicated that father's educational levels were similar for students in different training programs.

TABLE XLI

FATHER'S EDUCATIONAL LEVEL IN FREQUENCY COUNT AND PERCENTAGES ACCORDING TO:
(1)- EDUCATIONAL CATEGORY, AND (2)- TRAININ PROGRAM.

Father's Educational level		(1) Educational Category			(2) Training Program					Total
		ISS	TTC	ATC	Electrical	Automech-anics	Central Heating	Welding	Carpentry	
1- No Formal Education	n	94	96	59	52	46	48	54	49	249
	%	33.9	35.6	24.1	30.4	26.9	35	35.8	30.3	31.4
2- Elementary Education	n	112	97	116	68	74	53	59	71	325
	%	40.4	35.9	47.3	39.8	43.2	38.7	39.1	43.8	41.1
3- Preparatory Education	n	44	49	45	30	29	25	24	30	138
	%	15.9	18.1	18.4	17.5	17	18.2	15.8	18.5	17.4
4- Academic Secondary Education	n	17	20	17	12	17	6	12	7	54
	%	6.1	7.4	6.9	7	9.9	4.4	7.9	4.3	6.8
5- Vacational Secondary Education	n	1	2	5	2	1	2	1	2	8
	%	0.4	0.7	2.1	1.2	0.6	1.5	0.7	1.2	1
6- Community/Technical College	n	4	4	0	3	2	1	0	2	8
	%	1.4	1.5	0	1.8	1.2	0.7	0	1.2	1
7 - University Education	n	5	2	3	4	2	2	1	1	10
	%	1.8	0.7	1.2	2.3	1.2	1.5	0.7	0.6	1.3
Total	N	277	270	245	171	171	137	151	162	792

(1)Chi- square = 19.99, $(\chi)^2$ at 0.05 level and 12 df = 21.03

(2)Chi-square = 15.59, $(\chi)^2$ at 0.05 level and 24 df = 36.42

Mother's Education. Table XLII illustrates frequency count and percentages of mother's educational level according to student's educational category and training program. Testing for relationship between mother's educational level and student's educational category, chi-square calculations yielded a value of 9.99 which, with 12 degrees of freedom, was not significant at the .05 level. This indicated that mother's educational levels were similar for students in different educational category.

Concerning relationship between mother's educational level and student's training program, chi-square calculations yielded a value of 23.59 which, with 24 degrees of freedom, was not significant at the .05 level. This indicated that mother's educational levels were similar for students in different training programs.

Family Income. Data used to analyze family income were obtained from student's responses to question 13. Table XLIII illustrates frequency count and percentages of family income according to students' educational category and training program.

Testing for relationship between the student's family income and educational category, chi-square calculations yielded a value of 103.78 which, with 18 degrees of freedom, was significant at the .05 level. This indicated that students in different educational categories came from families with significantly different income.

Concerning relationship between students' family income and training programs, the chi-square test yielded a value of 45.27 which, with 36 degrees of freedom, was significant at the .05 level, indicating that students in different training programs came from families with significantly different income.

TABLE XLII

MOTHERS' EDUCATIONAL LEVEL IN FREQUENCY COUNT AND PERCENTAGES ACCORDING TO: (1) EDUCATIONAL CATEGORY, AND (2)- TRAINING PROGRAM.

Mother's Educational level		(1)Educational Category			(2) Training Program					Total
		ISS	TTC	ATC	Electrical	Automech-anic	Central Heating	Welding	Carpentry	
1- No Formal Education	n	183	190	160	107	119	93	93	121	533
	%	66	70.4	65.3	62.6	69.6	67.9	61.6	74.7	67.3
2- Elementary Education	n	62	60	62	46	36	29	41	32	184
	%	22.4	22.2	25.3	26.9	21.1	21.2	27.2	19.8	23.2
3- Preparatory Education	n	23	12	18	13	10	11	13	6	53
	%	8.3	4.4	7.3	7.6	5.8	8	8.6	3.7	6.7
4- Academic Secondary Education.	n	7	7	4	5	5	2	4	2	18
	%	2.5	2.6	1.6	2.9	2.9	1.5	2.6	1.2	2.3
5- Vocational Secondary Education.	n	1	0	0	0	0	1	0	0	1
	%	0.4	0	0	0	0	0.7	0	0	0.1
6 - Community/Technical College	n	1	0	1	0	0	1	0	1	2
	%	0.4	0	0.4	0	0	0.7	0	0.6	0.3
7 - University Education	n	0	1	0	0	1	0	0	0	1
	%	0	0.4	0	0	0.6	0	0	0	0.1
Total	N	277	270	245	171	171	137	151	162	792

(1)Chi-Square = 9.99, $(X)^2$ at 0.05 level and 12 df = 21.03

(2)Chi-Square = 23.59, $(X)^2$ at 0.05 level and 24 df = 36.42.

TABLE XLIII

FAMILY INCOME IN FREQUENCY COUNT AND PERCENTAGES ACCORDING TO (1) EDUCATIONAL CATEGORY AND (2) TRAINING PROGRAM

Family Income in US $		(1) Educational Category			(2) Training Program					Total
		ISS	TTC	ATC	Electrical	Automechanics	Central Heating	Welding	Carpentry	
1. Less Than $ 3000	n	52	100	54	53	49	30	39	35	206
	%	18.8	37	22	31	28.7	21.9	25.8	21.6	36
2. From $3001 To $6000	n	76	39	99	52	48	35	42	37	214
	%	27.4	14.4	40.4	30.4	28.1	25.5	27.8	22.8	27
3. From $6001 To $9000	n	19	16	35	12	18	13	11	16	70
	%	6.9	5.9	14.3	7	10.5	9.5	7.3	10	8.8
4. From $9001 To $12000	n	5	8	8	8	2	4	3	4	12
	%	1.8	3	3.3	4.7	1.2	2.9	2	2.5	2.6
5. From $12001 To $15000	n	4	2	4	1	1	0	2	6	10
	%	1.4	0.7	1.6	0.6	0.6	0	1.3	3.7	1.3
6. From $15001 To $18000	n	2	3	3	2	0	1	3	2	8
	%	0.7	1.1	1.2	1.2	0	0.7	2	1.2	1
7. From $18001 To $21000	n	0	1	1	0	1	0	0	1	2
	%	0	0.4	0.4	0	0.6	0	0	0.6	0.3
8. From $21001 To $24000	n	2	5	1	1	3	0	2	2	8
	%	0.7	1.9	0.4	0.6	1.8	0	1.3	1.2	1
9. More Than $24000	n	1	3	1	1	3	0	0	1	5
	%	0.4	1.1	0.4	0.6	1.8	0	0	0.6	0.6
0. I Do Not Know	n	116	93	39	41	46	54	49	58	248
	%	41.9	34.4	15.9	24	26.9	39.4	32.5	35.8	31.3
Total	N	277	270	245	171	171	137	151	162	792

(1) Chi-square = 103.78 , χ^2 at 0.05 level and 18 df = 28.869

(2) Chi-square = 45.27 , χ^2 at 0.05 level and 36 df = 30.02

Head of Household Occupational Title. Responses of students to question 12 provided data for head of household occupational title. Table XLIV illustrates frequency count and percentages of occupational titles of head of households according to students' educational category and training program.

Testing for relationship between head of household occupational title and student's educational category, the chi-square test yielded a value of 47.24 which, with 14 degrees of freedom, was significant at the .05 level. This indicated that occupational titles of heads of household are significantly different for students in different educational categories

Concerning relationship between head of household occupational title and students training program, the chi-square test yielded a value of 38.95 which, with 28 degrees of freedom, was not significant at the .05 level, indicating that occupational titles of heads of household are similar for students in different training programs.

Work Experience

Student responses to questions 14 to 27 provided data used to analyze work experience lasting more than one month before students had joined their programs. Table XLV illustrates frequency count and percentages of student responses to their experience gained according to educational category and training program. A student might have more than one experience, therefore the total number of responses (1241) was more than the 792 students.

Testing for relationship between students' work experience and their educational category, the chi-square test yielded a value of 43.58 which,

TABLE XLIV

HEAD OF HOUSEHOLD OCCUPATIONAL TITLE IN FREQUENCY COUNT AND PERCENTAGES ACCORDING TO (1) EDUCATIONAL CATEGORY AND (2) TRAINING PROGRAM

Occupational Title		(1) Educational Category			(2) Training Program					
		ISS	TTC	ATC	Electrical	Automechanics	Central Heating	Welding	Carpentry	Total
1.Unskilled Worker	n	47	82	53	43	38	33	35	33	182
	%	17	30.4	21.6	25	22.2	24.1	23.2	20.4	23
2.Semi-skilled Worker	n	59	76	76	35	55	36	49	36	211
	%	21.3	28.1	31	20.5	32.2	26.3	32.5	22.2	26.6
3.Skilled Worker	n	60	34	56	34	31	19	23	43	150
	%	21.7	12.6	22.9	19.9	18.1	13.9	15.2	26.5	19
4.Technician	n	26	13	10	11	9	9	9	11	49
	%	9.4	4.8	4.1	6.4	5.3	6.6	6	6.8	6.2
5.Administrator	n	42	34	28	28	19	24	14	19	104
	%	15.2	12.6	11.4	16.4	11.1	17.5	9.3	11.7	13.1
6.Proprietor	n	23	17	19	14	13	5	15	12	59
	%	8.3	6.3	7.8	8.2	7.6	3.6	9.9	7.4	7.4
7.Professional	n	5	5	3	5	1	2	2	3	13
	%	1.8	1.9	1.2	2.9	0.6	1.5	1.3	1.9	1.6
8.Others	n	15	9	0	1	5	9	4	5	24
	%	5.4	3.3	0	0.6	2.9	6.6	2.6	3.1	3.1
Total	N	277	270	245	171	171	137	151	162	792

(1)Chi-square =47.24, $(*)^2$ at .05 level and 14df = 23.68 (2) Chi-square = 38.95, $(*)^2$ at 0.05 level and28 df = 41.34

TABLE XLV

WORK EXPERIENCE IN FREQUENCY COUNT AND PERCENTAGES ACCORDING TO STUDENTS' (1) EDUCATIONAL CATEGORY AND (2) TRAINING PROGRAM

Work experience		(1) Educational Category			(2) Training Program					
		ISS n=277	TTC n=270	ATC n=245	Electrical n=171	Automechanics n=171	Central Heating n =137	Welding n=151	Carpentry n=162	Total N=792
14.Sales Work	n	71	69	83	46	42	44	45	46	223
	%	25.6	25.6	33.9	26.9	24.6	32.1	28.4	29.8	28.2
15.Clerical Work	n	12	10	11	7	8	5	9	4	33
	%	4.3	3.7	1.5	4.1	4.7	3.6	6	2.5	4.2
16.Resturant Work	n	11	23	20	17	7	9	11	10	54
	%	4	8.5	8.2	9.9	4.1	6.6	7.3	6.2	6.8
17.Grocery Work	n	30	38	26	22	16	22	18	16	94
	%	10.8	14.1	10.6	12.9	9.4	16.1	11.9	9.8	11.9
18.Farm Work	n	51	50	30	34	24	20	33	20	131
	%	18.4	18.5	12.2	19.9	14	14.6	21.9	12.3	16.5
19.Car Cleaning	n	2	6	7	4	2	1	3	5	15
	%	0.7	2.2	2.9	2.3	1.2	0.7	2	3.1	2
20.Car/Truck Driving	n	22	26	21	15	23	5	17	9	69
	%	7.9	9.6	8.6	8.8	13.5	3.6	11.3	5.6	8.7
21. Automechanic	n	13	32	26	9	29	5	16	12	71
	%	4.7	11.9	10.6	5.3	17	3.6	10.6	7.4	9
22.Construction Work	n	58	59	56	47	47	17	29	33	173
	%	20.9	21.9	22.9	27.5	27.5	12.4	19.2	20.4	21.8
23. Wood Work/Carpentry	n	38	40	26	20	11	13	19	41	104
	%	13.7	14.8	10.6	11.7	6.4	9.5	12.6	25.3	13.1
24.Electrical/Electronics	n	36	29	18	42	14	6	11	10	83
	%	13.1	10.7	7.3	24. 6	8.2	4.4	7.3	6.2	10.5
25 .Metal Work	n	14	22	25	13	7	5	29	7	61
	%	5.1	8.1	10.2	7.6	4.1	3.6	19.2	4.3	7.7
26.Air Conditioning/ Central Heating/ Plumbing.	n	36	22	24	9	11	35	18	9	82
	%	13	8.1	9.8	5.3	6.4	25.5	11.9	5.6	10.4
27 .Others	n	17	11	20	9	7	9	14	9	48
	%	6.1	4.1	8.2	5.3	4.1	6.6	9.3	5.6	6.1
Total	N	411	437	393	294	248	196	272	231	1241

(1) Chi-square =43.58, $(*)^2$ at 0.05 level and 26 df = 38.88

(2) Chi-square = 215.1526 , $(*)^2$ at 0.05 level and 52 df = 69.82.

with 26 degrees of freedom, was significant at the .05 level. This indicated that there is a significant difference in the work experience gained by students in different educational categories.

Concerning relationship between work experience and students' training programs, the chi-square test yielded a value of 215.15 which, with 52 degrees of freedom, was significant at the .05 level. This indicated that work experiences gained by students are significantly different for students in different training programs.

Students' Aspirations and Expectations

In this section student aspirations and expectations were revealed through student responses to questions 58 to 65. Data obtained from Part C of the survey instrument were analyzed to meet Objective Six: To determine the aspirations and expectations of students enrolling in programs of industrial education and training.

At the end of the ninth grade, students were asked to complete the educational choice form which included seven possible alternatives to continue their education. For the present study, the students were asked to indicate the rank they gave their current educational category when they completed the ninth grade form. Responses to question 58 were checked against files in the departments of education. Students' commitment to their educational category was revealed by their responses to question 59, and commitment to their training program was revealed by their responses to question 60. Students were asked to rank their future goals after graduation according to their priorities. Responses to questions 61 through 65 provided data to be analyzed in order to discover aspirations and expectations of students enrolling in industrial

education and training.

Students' Educational Category
In the Ninth Grade Choice Form

Table XLVI illustrates frequency count and percentages of students' ranking in the ninth grade of their actual current placement, by educational category and training program.

Testing for relationship between current educational category and its rank order in the educational choice form at the end of ninth grade, the chi-square test yielded a value of 270.21 which, with 12 degrees of freedom, was found significant at the .05 level. This indicated that there was a significant relationship between the student's educational category and its order in the choice form at the end of ninth grade. Students tended to be enrolled in educational categories which they had ranked high in their educational choice form at the end of the ninth grade.

Concerning relationship between current training program and the rank order of the educational category in the educational choice form at the end of the ninth grade, the chi-square test yielded a value of 60.6 which, with 24 degrees of freedom, was found significant at the 0.05 level. This indicated that there was a significant relationship between students' training program and the order of the educational category they selected on the educational choice form at the end of the ninth grade.

Students' Willingness to Change
Their Educational Category

Table XLVII illustrates frequency count and percentages of students

TABLE XLVI

FREQUENCY COUNT AND PERCENTAGES OF THE ORDER OF STUDENTS' CURRENT EDUCATIONAL CATEGORY IN THE NINTH GRADE EDUCATIONAL CHOICE FORM ACCORDING TO: (1) EDUCATIONAL CATEGORY, AND (2) TRAINING PROGRAM.

Students Choice		(1) Educational Category			(2) Training Program					Total
		ISS	TTC	ATC	Electrical	Automechanics	Central Heating	Welding	Carpentry	
1.First Choice	n	205	85	64	76	80	65	52	81	354
	%	74	31.5	26.1	44.4	46.8	47.4	34.4	50	44.7
2.Second Choice	n	63	24	20	22	18	18	26	23	107
	%	22.7	8.9	8.2	9.8	10.5	13.1	17.2	14.2	13.5
3.Third Choice	n	8	19	22	10	19	11	6	3	49
	%	2.9	7	9	5.8	11.1	8	4	1.9	6.2
4.Fourth Choice	n	1	31	22	13	12	4	20	5	54
	%	o.4	11.5	9	7.6	7	2.9	13.2	3.1	6.8
5.Fifth Choice	n	0	23	26	15	16	5	8	5	49
	%	0	8.5	10.6	8.8	9.4	3.6	5.3	3.1	6.2
6.Sixth Choice	n	0	32	30	15	11	14	13	9	62
	%	0	11.9	12.2	8.8	6.4	10.2	8.6	5.6	7.8
7.Seventh Choice	n	0	56	61	20	15	20	26	36	117
	%	0	20.7	24.9	11.7	8.8	14.6	17.2	22.2	14.8
Total	N	277	270	245	171	171	137	151	162	792

(1)Chi- square = 270.211; $(X)^2$ at 0.05 level and 12 df = 21.03

(2)Chi-square = 60.570; $(X)^2$ at 0.05 level and 24df = 36.42.

TABLE XLVII

FREQUENCY COUNT AND PERCENTAGES OF STUDENTS' WILLINGNESS TO CHANGE THEIR CURRENT EDUCATIONAL CATEGORY ACCORDING TO: (1) EDUCATIONAL CATEGORY, AND (2) TRAINING PROGRAM

Students' Willingness to Change Educational Category to:		(1) Educational Category			(2) Training Program					
		ISS	TTC	ATC	Electrical	Automechanics	Central Heating	Welding	Carpentry	Total
1. Would not change	n	236	198	206	137	138	116	122	127	640
	%	85.2	73.3	84.1	80.1	80.7	84.7	80.8	78.4	80.8
2. Hotel Education	n	10	2	3	1	3	1	4	6	15
	%	3.6	0.7	1.2	0.6	1.8	0.7	2.6	3.7	1.9
3.Agricultural Education	n	1	0	1	0	1	0	0	1	2
	%	0.4	0	0.4	0	0.6	0	0	0.6	0.3
4.Postal Education	n	0	0	0	0	0	0	0	0	0
	%	0	0	0	0	0	0	0	0	0
5. Business Education	n	1	5	6	4	2	0	5	1	12
	%	0.4	1.9	2.4	2.3	1.2	0	3.3	0.6	1.5
6. Academic Education	n	28	27	12	17	17	3	12	18	67
	%	10.1	10	4.9	9.9	9.9	2.2	7.9	11.1	8.5
7. Industrial Education	n	0	37	15	11	10	15	8	8	52
	%	0	13.7	6.1	6.4	5.8	10.9	5.3	4.9	6.6
8 .Trade Training (TTC)	n	1	1	2	1	1	1	0	1	4
	%	0.4	0.4	0.8	0.6	0.6	0.7	0	0.6	0.4
9.Apprenticeship Training (ATC)	n	0	1	0	0	0	1	0	0	1
	%	0	0.4	0	0	0	0.7	0	0	0.1
Total		277	270	245	171	171	137	151	162	792

(1) Chi-square = 62.221, X^2 at .05 level and 14 df = 23.685

(2) Chi-square = 34.669, X^2 at .05 level and 28 df = 41.337

responses to change their educational category. Data presented in this table indicated that 80.8 percent of all students would not like to change their educational category.

Testing for relationship between students' willingness to change and their educational category, the chi-square test yielded a value of 62.221 which, with 14 degrees of freedom, was significant at the .05 level. This indicated that willingness to change was significantly different for students in different educational categories.

To test the relationship between students' willingness to change the educational category and their training programs, the chi-square test yielded a value of 34.669 which, with 28 degrees of freeedom, was not significant at the .05 level. This indicated that willingness to change was not significantly different for students in different training programs.

Students' Willingness to Change
Their Training Program

Table XLVIII illustrates frequency count and percentages of students responses to willingness to change their training programs. Data presented in this table indicated that 61.7 percent of all students would not like to change their training program.

To test the relationship between students' willingness to change their training program and their educational category, the chi-square test yielded a value of 71.435 which, with 42 degrees of freeedom, was significant at the .05 level. This indicated that willingness to change training programs was significantly different for students in different educational categories.

TABLE XLVIII

FREQUENCY COUNT AND PERCENTAGES OF STUDENTS WILLINGNESS TO CHANGE THEIR CURRENT TRANING PROGRAM ACCORDING TO (1) EDUCATIONAL CATEGORY AND (2) TRAINING PROGRAM

Students Willings to change His Training Program to:		(1) Educational Category			(2) Training Program					Total
		ISS	TTC	ATC	Electrical	Automechanics	Central Heating	Welding	Carpentry	
No Change	n	166	171	152	104	94	11o	68	113	489
	%	59.9	63.3	62	60.8	55	80.3	45	70	61.7
01. Electrical Utilization	n	6	6	1	0	4	3	5	1	13
	%	5.4	6.1	1.1	0	5.2	11.1	6	2	4.3
02. Electrical Transmission	n	2	2	1	3	0	1	0	1	5
	%	1.8	2	1.1	4.5	0	3.7	0	2	1.7
03. Electrical Generation	n	4	1	6	6	0	2	3	0	11
	%	3.6	1	6.5	9	0	7.4	3.6	0	3.6
04. Radio and TV	n	12	7	3	9	2	2	2	7	22
	%	10.8	7.1	3.2	13.4	2.6	7.4	2.4	14.3	7.3
05. Telecommunication	n	2	1	1	2	1	0	1	0	4
	%	1.8	1	1.1	3	1.3	0	1.2	0	1.3
06. Automechanics	n	16	8	7	8	0	5	10	8	31
	%	14.4	8.1	7.5	11.9	0	18.5	12	16.3	10.2
07. Dieselmechanics	n	18	23	39	5	51	2	14	8	80
	%	16.2	23.2	41.9	7.5	66.2	7.4	16.9	16.3	26.4
08. Farm Machinary	n	0	0	2	0	2	0	0	0	2
	%	0	0	2.2	0	2.6	0	0	0	0.6
09. Auto Body Repair	n	4	6	3	2	2	3	2	4	13
	%	3.6	6	3.2	3	2.6	11.1	2.4	8.2	4.3
10.Instrumentation	n	5	2	4	5	3	0	2	1	11
	%	4.5	2	4.3	7.5	3.9	0	2.4	2	3.6
11.Office Machines Mechanic	n	0	0	0	0	0	0	0	0	0
	%	0	0	0	0	0	0	0	0	0
12. Refregeration	n	11	16	7	9	5	4	9	7	34
	%	9.9	16.2	7.5	13.4	6.5	14.8	10.8	14.3	11.2

TABLE XLVIII (Continued)

Student's Willings to change His Training Program to:		(1) Educational Category			(2) Training Program					Total
		ISS	TTC	ATC	Electrical	Automechanics	Central Heating	Welding	Carpentry	
13.Central Heating	n	15	11	13	8	0	0	21	10	39
	%	13.5	11.1	14	11.9	0	0	25.3	20.4	12.9
14.Machining	n	0	2	0	0	0	1	1	0	2
	%	0	2	0	0	0	3.7	1.2	0	0.7
15.Engine Grinding	n	4	1	1	0	0	0	6	0	6
	%	3.6	1	1.1	0	0	0	7.2	0	2
16.Welding	n	1	0	0	0	0	0	0	1	1
	%	0.9	0	0	0	0	0	0	2	0.3
17.Plant Maintenance	n	6	3	0	2	5	1	1	0	9
	%	5.4	3	0	3	6.5	3.7	1.2	0	3
18.Upholstry	n	1	0	0	0	0	0	0	1	1
	%	0.9	0	0	0	0	0	0	2	0.3
19.Carpentry	n	3	5	2	5	1	0	4	0	10
	%	2.7	5.1	2.2	7.5	1.3	0	4.8	0	3.3
20.Building & Shuttering	n	0	1	0	0	0	1	0	0	1
	%	0	1	0	0	0	3.7	0	0	0.3
21.Plastering & Tiling	n	0	2	2	2	0	1	1	0	4
	%	0	2	2.2	3	0	3.7	1.2	0	1.3
22.Others	n	1	2	1	1	1	1	1	0	4
	%	0.9	2	1.1	1.5	1.3	3.7	1.2	0	1.3
Sub Total Of Change	n	111	99	93	67	77	27	83	49	303
	%	40.1	36.7	38	39.2	45	19.7	55	30	38.3
Total	N	277	270	245	171	171	137	151	162	792

(1) Chi-square = 71.435, X^2 at .05 level and 42 df = 58.108

(2) Chi-square = 261.744, X^2 at .05 level and 84 df = 106.385

Concerning the relationship between students willingness to change and their training programs, the chi-square test yielded a value of 261.744 which, with 84 degrees of freedom, was significant at the .05 level, thus indicating that willingness to change was significantly different for students in different training programs.

Future Goals

Students were asked in questions 61 through 65 to rank order their career goals according to their priorities up to the fifth goal. The goal rank was given a numerical value as follows: five for the first goal, four for the second goal, three for the third goal, two for the fourth goal, and one for the fifth goal. The total weighted response for each possible goal was calculated by multiplying the frequency count for that goal by its rank value, and then summing the products up to the fifth goal. Table IL illustrates frequency count, percentages, and the total weighted response of all students to rank their future goals. Taking the total weighted responses as an indicator of the importance of the future goal statements, the rank ordering of these statements in descending order was as follows: "complete 2-year polytechnic institute," "complete 4-5 year professional college," "to go to work," "seek advanced training," "plan to sit for GSECE," "join the military," and "others."

Table L illustrates frequency count, percentages, and the total weighted response of ISS students to rank their future goals. Data indicated that ranking future goals in descending order and according to the total weighted response, they were as follows: "complete 4-5 year professional college," "complete 2-year polytechnic institute," "seek advanced training," "go to work," "join the military," "plan to sit for

TABLE IL

FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED RESPONSES
OF ALL STUDENTS TO RANK THEIR FUTURE GOALS

Future Goal Statement		Future Goal Order					Total	
		First Goal	Second Goal	Third Goal	Fourth Goal	Fifth Goal	Count	Weighted Response
1. Go to Work	n	174	101	111	186	177	749	2156
	%	22	12.6	14	23.5	22.3	18.9	
2. Join the Military	n	31	40	59	94	252	476	932
	%	3.9	5.1	7.4	11.9	31.8	12	
3. Seek Advanced Training	n	66	133	271	178	81	729	2112
	%	8.3	16.8	34.2	22.5	10.2	18.4	
4. Plan to Sit for GSECE(*)	n	163	127	124	95	56	565	1941
	%	20.6	16	15.7	12	7.1	14.3	
5. Complete 2-year Polytechnic Institute	n	97	294	123	115	94	723	2354
	%	12.2	37.1	15.5	14.5	11.9	18.3	
6. Complete 4-5 year Professional College	n	244	93	103	115	109	664	2240
	%	30.8	11.7	13	14.5	13.8	16.8	
7. Others	n	17	4	1	9	23	54	145
	%	2.1	0.5	0.1	1.1	2.9	1.4	
Total		792	792	792	792	792	3960	

(*) GSECE = General Secondary Education Certificate Examination

TABLE L

FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED RESPONSES OF ISS STUDENTS TO RANK THEIR FUTURE GOALS

Future Goal Statement		Future Goal Order					Total	
		First Goal	Second Goal	Third Goal	Fourth Goal	Fifth Goal	Count	Weighted Response
1. Go to Work	n	18	33	47	113	58	269	647
	%	6.5	11.9	17	40.8	20.9	19.4	
2. Join the Military	n	4	5	21	39	150	219	331
	%	1.4	1.8	7.6	14.1	54.2	15.8	
3. Seek Advanced Training	n	10	21	151	61	24	267	733
	%	3.6	7.6	54.5	22	8.7	19.3	
4. Plan to Sit for GSECE(*)	n	4	9	18	21	14	66	166
	%	1.4	3.2	6.5	7.6	5.1	4.8	
5. Complete 2-year Polytechnic Institute	n	50	177	23	15	8	273	1065
	%	18.1	63.9	8.3	5.4	2.9	19.7	
6. Complete 4-5 year Professional College	n	189	30	17	25	14	275	1180
	%	68.2	10.8	6.1	9	5.1	19.9	
7. Others	n	2	2	0	3	9	16	33
	%	0.7	0.7	0	1.1	3.2	1.2	
Total		277	277	277	277	277	1385	

(*) GSECE = General Secondary Education Certificate Examination

GSECE," and "others."

Table LI illustrates frequency count, percentages, and the total weighted response of TTC students to rank their future goals.

According to the total weighted response, future goals ranked in descending order were as follows: "plan to sit for GSECE," "go to work," "seek advanced training," "complete 2-year polytechnic institute," "complete 4-5 year professional college," "join the military" and "others."

Table LII illustrates frequency count, percentages, and the total weighted response of ATC students to rank their future goals. Rank ordering future goals in descending order and according to the total weighted response, they were as follows: "plan to sit for GSECE," "go to work," "seek advanced training," "complete 2-year polytechnic institute," "complete 4-5 year professional college," "join the military," and "others."

Table LIII illustrates the total weighted response and the rank order of students responses to future goals according to educational category. Testing for relationship between the rank order of students' future goals and their educational category, the Kruskal-Wallis test yielded an H-value of 0.208 which, with two degrees of freedom, was not significant at the .05 level. This indicated that there was no significant difference in ranking future goals among students in different educational categories.

Table LIV to table LVIII illustrate student responses to rank their future goals according to their training programs.

Table LIV illustrates frequency count, percentages, and the total weighted responses of electrical students to rank their future goals.

TABLE LI

FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED RESPONSES
OF TTC STUDENTS TO RANK THEIR FUTURE GOALS

Future Goal Statement		Future Goal Order					Total	
		First Goal	Second Goal	Third Goal	Fourth Goal	Fifth Goal	Count	Weighted Response
1. Go to Work	n	78	38	30	47	55	248	781
	%	28.9	14.1	11.1	17.4	20.4	18.4	
2. Join the Military	n	20	23	21	30	58	152	373
	%	7.4	8.5	7.8	11.1	21.5	11.3	
3. Seek Advanced Training	n	30	57	66	51	32	236	710
	%	11.1	21.1	24.4	18.9	11.9	17.5	
4. Plan to Sit for GSECE(*)	n	75	63	59	41	25	263	911
	%	27.8	23.3	21.9	15.2	9.3	19.5	
5. Complete 2-year Polytechnic Institute	n	34	56	47	55	40	232	685
	%	12.6	20.7	17.4	20.4	14.8	17.2	
6. Complete 4-5 year Professional College	n	26	32	46	44	55	203	539
	%	9.6	11.9	17	16.3	20.4	15	
7. Others	n	7	1	1	2	5	16	51
	%	2.6	0.4	0.4	0.7	1.9	1.2	
Total		270	270	270	270	270	1350	

(*) GSECE = General Secondary Education Certificate Examination

TABLE LII

FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED RESPONSES
OF ATC STUDENTS TO RANK THEIR FUTURE GOALS

Future Goal Statement		Future Goal Order					Total	
		First Goal	Second Goal	Third Goal	Fourth Goal	Fifth Goal	Count	Weighted Response
1. Go to Work	n	78	30	34	26	64	232	728
	%	31.8	12.2	13.9	10.6	26.1	31.6	
2. Join the Military	n	7	12	17	25	44	105	228
	%	2.9	4.9	6.9	10.2	18	14.3	
3. Seek Advanced Training	n	26	55	54	66	25	226	669
	%	10.6	22.4	22	26.9	10.2	30.7	
4. Plan to Sit for GSECE(*)	n	84	55	47	33	17	236	864
	%	34.3	22.4	19.2	13.5	6.9	32.1	
5. Complete 2-year Polytechnic Institute	n	13	61	53	45	46	218	604
	%	5.3	24.9	21.6	18.4	18.8	29.7	
6. Complete 4-5 year Professional College	n	29	31	40	46	40	186	521
	%	11.8	12.7	16.3	18.8	16.3	25.3	
7. Others	n	8	1	0	4	9	22	61
	%	3.3	0.4	0	1.6	3.7	3	
Total		245	245	245	245	245	735	

(*) GSECE = General Secondary Education Certificate Examination

TABLE LIII

TOTAL WEIGHTED RESPONSE AND RANK ORDER OF STUDENTS RESPONSES TO FUTURE GOALS ACCORDING TO EDUCATIONAL CATEGORY

Future Goal	Educational Category						Total	
	ISS		TCC		ATC			
	Weighted Response	Rank	Weighted Response	Rank	Weighted Response	Rank	Weighted Response	Rank
1. Go to Work	647	11	781	17	728	15	2156	5
2. Join the Military	331	6	373	7	228	5	932	2
3. Seek Advanced Training	733	16	710	14	669	12	2112	4
4. Plan to Sit for GSECE(*)	166	4	910	19	864	18	1940	3
5. Complete 2-year Polytechnic Institute	1065	20	685	13	604	10	2354	7
6. Complete 4-5 year Professional College	1180	21	539	9	521	8	2240	6
7. Others	33	1	51	2	61	3	145	1
Grand Weighted Response	4155		4049		3675		11879	
$T = \sum R$		79		81		71		
n	7		7		7			

Kruskal-Wallis H value = 0.208, χ^2 at 0.05 level and 2 df is 5.991

TABLE LIV

FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED RESPONSES OF ELECTRICAL STUDENTS TO RANK THEIR FUTURE GOALS

Future Goal Statement		Future Goal Order					Total	
		First Goal	Second Goal	Third Goal	Fourth Goal	Fifth Goal	Count	Weighted Response
1. Go to Work	n	29	24	20	41	44	158	427
	%	17	14	11.7	24	25.7	18.5	
2. Join the Military	n	6	6	13	25	48	98	191
	%	3.5	3.5	7.6	14.6	28.1	11.5	
3. Seek Advanced Training	n	14	34	58	34	19	159	467
	%	8.2	19.9	33.9	19.9	11.1	18.6	
4. Plan to Sit for GSECE(*)	n	34	26	27	25	14	126	419
	%	19.9	15.2	15.8	14.6	8.2	14.7	
5. Complete 2-year Polytechnic Institute	n	24	67	31	14	26	162	535
	%	14	39.2	18.1	8.2	15.2	18.9	
6. Complete 4-5 year Professional College	n	62	13	22	32	14	143	506
	%	36.3	7.6	12.9	18.7	8.2	16.7	
7. Others	n	2	1	0	0	6	9	20
	%	1.2	0.6	0	0	3.5	1.1	
Total		171	171	171	171	171	855	

(*) GSECE = General Secondary Education Certificate Examination

Data indicated that ranking future goals in descending order and according to the total weighted response, they were as follows: "complete 2-year polytechnic institute," "complete 4-5 year professional college," "seek advanced training," "go to work," "plan to sit for GSECE," "join the military," and "others."

Table LV illustrates frequency count, percentages, and the total weighted responses of automechanic students to rank their future goals. Rank ordering future goals in descending order and acccording to the total weighted response, they were as follows: "complete 4-5 year professional college," "go to work," "complete 2-year polytechnic institute," "seek advanced training," "plan to sit for GSECE," "join the military," and "others."

Table LVI illustrates frequency count, percentages, and the total weighted response of central heating students to rank order their future goals. According to the total weighted response, future goals were ranked in descending order as follows: "complete 2-year polytechnic institute," "seek advanced training," "complete 4-5 year professional college," "go to work," "plan to sit for GSECE," "join the military," and "others."

Table LVII illustrates frequency count, percentages, and the total weighted response of welding students to rank order their future goals. Data indicated that ranking future goals in descending order and according to the total weighted response, they were as follows: "go to work," "complete 2-year polytechnic institute," "seek advanced training," "complete 4-5 year professional college," "plan to sit for GSECE," "join the military," and "others."

Table LVIII illustrates frequency count, percentages, and the total

TABLE LV

FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED RESPONSES OF AUTOMECHANIC STUDENTS TO RANK THEIR FUTURE GOALS

Future Goal Statement		Future Goal Order					Total	
		First Goal	Second Goal	Third Goal	Fourth Goal	Fifth Goal	Count	Weighted Response
1. Go to Work	n	38	21	26	40	36	161	468
	%	22.2	12.3	15.2	23.4	21.1	18.8	
2. Join the Military	n	8	8	12	23	56	107	210
	%	4.7	4.7	7	13.5	32.7	12.5	
3. Seek Advanced Training	n	12	22	64	37	24	159	438
	%	7	12.9	37.4	21.6	14	18.6	
4. Plan to Sit for GSECE(*)	n	38	29	19	20	13	119	416
	%	22.2	17	11.1	11.7	7.6	13.9	
5. Complete 2-year Polytechnic Institute	n	14	61	24	26	20	145	458
	%	8.2	35.7	14	15.2	11.7	17	
6. Complete 4-5 year Professional College	n	53	28	26	21	15	143	512
	%	31	16.4	15.2	12.3	8.8	16.7	
7. Others	n	8	2	0	4	7	21	63
	%	4.7	1.2	0	2.3	4.1	2.5	
Total		171	171	171	171	171	855	

(*) GSECE = General Secondary Education Certificate Examination

TABLE LVI

FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED RESPONSES OF CENTRAL HEATING STUDENTS TO RANK THEIR FUTURE GOALS

Future Goal Statement		Future Goal Order					Total	
		First Goal	Second Goal	Third Goal	Fourth Goal	Fifth Goal	Count	Weighted Response
1. Go to Work	n	27	18	19	36	33	133	369
	%	19.7	13.1	13.9	26.3	24.1	19.4	
2. Join the Military	n	6	6	8	9	40	79	156
	%	4.4	4.4	5.8	6.6	29.2	11.5	
3. Seek Advanced Training	n	16	23	50	25	12	126	384
	%	11.6	16.8	36.5	18.2	8.8	18.4	
4. Plan to Sit for GSECE(*)	n	29	27	24	13	8	101	359
	%	21.2	19.7	17.5	9.5	5.8	14.7	
5. Complete 2-year Polytechnic Institute	n	16	50	17	24	17	124	396
	%	11.6	36.5	12.4	17.5	12.4	18.1	
6. Complete 4-5 year Professional College	n	42	13	19	17	21	112	374
	%	30.7	9.5	13.9	12.4	15.3	16.4	
7. Others	n	1	0	0	3	6	10	17
	%	0.7	0	0	2.2	4.4	1.5	
Total		137	137	137	137	137	685	

(*) GSECE = General Secondary Education Certificate Examination

TABLE LVII

FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED RESPONSES OF WELDING STUDENTS TO RANK THEIR FUTURE GOALS

Future Goal Statement		Future Goal Order					Total	
		First Goal	Second Goal	Third Goal	Fourth Goal	Fifth Goal	Count	Weighted Response
1. Go to Work	n	50	19	17	34	25	145	470
	%	33.1	12.6	11.3	22.5	1.6	19.2	
2. Join the Military	n	5	12	15	15	52	99	200
	%	3.3	7.9	9.9	9.9	34.4	13.1	
3. Seek Advanced Training	n	13	29	52	32	11	137	412
	%	8.6	19.2	34.4	21.2	7.3	18.1	
4. Plan to Sit for GSECE(*)	n	19	28	23	24	11	105	335
	%	12.6	18.5	15.2	15.9	7.3	13.9	
5. Complete 2-year Polytechnic Institute	n	19	47	30	24	17	137	438
	%	12.6	31.1	19.9	15.9	11.3	18.1	
6. Complete 4-5 year Professional College	n	42	15	13	21	33	124	384
	%	27.8	9.9	8.6	13.9	21.9	16.4	
7. Others	n	3	1	1	1	2	8	26
	%	2	0.7	0.7	0.7	1.3	1.1	
Total		151	151	151	151	151	755	

(*) GSECE = General Secondary Education Certificate Examination

TABLE LVIII

FREQUENCY COUNT, PERCENTAGES, AND WEIGHTED RESPONSES OF CARPENTRY STUDENTS TO RANK THEIR FUTURE GOALS

Future Goal Statement		Future Goal Order					Total	
		First Goal	Second Goal	Third Goal	Fourth Goal	Fifth Goal	Count	Weighted Response
1. Go to Work	n	30	19	29	35	39	152	422
	%	18.5	11.7	17.9	21.6	24.1	18.8	
2. Join the Military	n	6	8	11	12	56	93	175
	%	3.7	4.9	6.8	7.4	34.6	11.5	
3. Seek Advanced Training	n	11	25	47	50	15	148	411
	%	6.8	15.4	29	30.9	9.3	18.3	
4. Plan to Sit for GSECE(*)	n	43	17	31	13	10	114	412
	%	26.5	10.5	19.1	8	6.2	14.1	
5. Complete 2-year Polytechnic Institute	n	24	69	21	27	14	155	527
	%	14.8	42.6	13	16.7	8.6	19.1	
6. Complete 4-5 year Professional College	n	45	24	23	24	26	142	464
	%	27.8	14.8	14.2	14.8	16	17.5	
7. Others	n	3	0	0	1	2	6	19
	%	1.9	0	0	0.6	1.2	0.7	
Total		162	162	162	162	162	810	

(*) GSECE = General Secondary Education Certificate Examination

weighted response of carpentry students to rank their future goals. Rank ordering future goals in descending order and according to the total weighted response, they were as follows: "complete 2-year polytechnic institute," "complete 4-5 year professional college," "go to work," "plan to sit for GSECE," "seek advanced training," "join the military," and "others."

Table LIX illustrates the total weighted response and the rank order of students responses to future goals according to their training program. Testing for relationship between the rank order of students future goals and their training programs, the Kruskal-Wallis test yielded an H-value of 5.137 which, with four degrees of freedom, was not significant at the .05 level. This indicated that there was no significant difference in ranking future goals among students in different training programs.

This chapter has presented all of the data obtained for the 65 item questionnaire administered to 792 students selected on the basis of a stratafied and clustered random sample. The chapter which follows presents a summary of the study together with findings, conclusions and recommendations.

TABLE LIX

TOTAL WEIGHTED RESPONSE AND RANK ORDER OF STUDENTS RESPONSES TO FUTURE GOALS ACCORDING TO TRAINING PROGRAM

Future Goal	Training Program									
	Electrical		Automechanic		Central Heating		Welding		Carpentry	
	Weighted Response	Rank	Weighted Response	Rank	Weighted Response	Rank	Weighted Response	Rank	Weighted Response	Rank
1. Go to Work	427	24	468	30	369	13	470	31	422	23
2. Join the Military	191	8	210	10	156	6	200	9	175	7
3. Seek Advanced Training	467	29	438	25.5	384	15.5	412	19.5	411	18
4. Plan to Set for GSECE	419	22	416	21	359	12	335	11	412	19.5
5. Complete 2-year Polytechnic Institute	535	35	458	27	396	17	438	25.5	527	34
6. Complete 4-5 year Professional College	506	32	512	33	374	14	384	15.5	464	28
7. Others	20	3	63	5	17	1	26	4	19	2
Grand Weighted Response	2565		2565		2055		2265		2430	
$T = \sum R$		153		151.5		78.5		115.5		131.5
n	7		7		7		7		7	

Kruskal-Wallis H value = 5.137, χ^2 at 0.05 level and 2 df is 9.488

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Purpose

This study sought to identify students' perceptions of factors which influenced their decision to select training programs, to identify some educational and demographic characteristics of students, and to explore students' aspirations and expectations of their future goals after they graduate from their programs in industrial education and training in the East Bank of Jordan.

The intent of this research was to fulfill the following six objectives:

1. To determine which people influenced a student's decision to select his programs.

2. To determine which sources of information influenced a student's decision to select his program.

3. To determine which economic factors influenced a student's decision to select his program.

4. To determine which personal and general factors influenced a student's decision to select his program.

5. To determine the general characteristics of students enrolling

in industrial education and training.

6. To determine the aspirations and expectations of students enrolling in industrial education and training.

Procedures

An instrument was developed to gather three types of data about students. The first type of data included certain demographic, socioeconomic, and educational characteristics of students. The second type of data identified factors which influenced student decisions to select their programs. The third type revealed students' commitment to their educational category and training program and explored their aspirations and expectations after they graduate from their programs. The instrument was field tested to determine needed refinements.

The sample consisted of 61 classes in five selected programs: electrical, automechanics, central heating, welding, and carpentry in each of three educational categories: industrial secondary schools (ISS), trade training centers (TTC), and apprenticeship training centers (ATC). Seventeen schools/centers were selected in the two major governorates of Amman and Irbid in the East Bank of Jordan.

The student sample was composed of 792 respondents--of them 277 ISS students, 270 TTC students, and 245 ATC students. According to training programs, 171 students were enrolled in electrical, 171 in automechanics, 137 in central heating, 151 in welding, and 162 in the carpentry program.

Data collection was completed in the first six weeks of the 1983 fall semester. The questionnaire was administered to students and data were collected in group settings by the researcher, with staff assistance

at the 17 institutions. Overhead projectors and transparencies of the questionnaire were used to guide students in completing their questions in all schools and centers.

Findings

Factors Influencing Student's Choice

The data analyzed revealed that only four people had significant influence regarding all students' decisions to select their programs. In descending order those people were ranked according to the extent of their influence as follows:

1. Parents
2. Brothers/sisters
3. People working in the occupation
4. Friends

In selecting their programs, ISS and TTC students were influenced only by their parents, while ATC students were influenced by their parents, brothers/sisters, people working in the occupation, and friends.

Data pertaining to sources of information influencing all students' vocational choice revealed that none of the sources of information had significant influence. For the ACT students prevocational education was the only factor which had significant influence. A striking feature of these results was that two-fifths of the students' responses to vocational guide book were in the "does not apply," catagory and about two-fifths of the responses were related as having very little influence.

Data related to economic factors indicated that only two factors had significant influence on all student's decisions in selecting a program:

1. Work availability after graduation
2. Earning potential after graduation

For ATC students, a third factor, wages earned during training, was found significant in addition to the two previous factors.

Data pertaining to personal and general factors influencing students' decisions to select their programs revealed that three factors were significant. These factors, ranked in descending order of their influence, were as follows:

1. Interest in the program
2. Reputation of faculty and institution
3. Low grades in math and science

Low grades in math and science were not a significant factor for TTC students, while facility equipment was a significant factor for ATC students in addition to the other three significant factors.

The four group factors ranked in descending order to the extent of their influence on students' vocational choice of their programs were as follows:

1. Personal and general factors
2. Economic factors
3. People
4. Sources of information

Students' Characteristics

Approximately one half of grade ten students were in the "less than 16" age group, one half of grade 11 students were in the 16+ age group, and more than one half of grade 12 students were in the 17+ age group. One half of all students and 70 percent of ATC students came from

communities of over 50,000 people.

Concerning students' academic standing, approximately one sixth of all students had percentile ranks of over 60 in their ninth grade year, about one fourth had 59-40 percentile ranks, and one third each in percentile rank ranges of 39-20 and 19-00.

Data related to parents' education revealed that approximately one third of fathers and two thirds of mothers had no formal education, two fifths of fathers and one fourth of mothers had elementary education, and one fourth of fathers and one tenth of mothers had preparatory and higher levels of education.

Data pertaining to family income indicated that approximately one fourth of student families had income of less than $3,000, one fourth of the families had income of $3,001 to $6,000, one sixth of the families had income of more than $6,000, and one third of students did not know their family income.

Approximately one fourth of the heads of students' households were at the unskilled worker level, one fourth were at the semi-skilled worker level, two fifths were at the skilled worker level, and about one third of the heads of households were at other occupational levels.

Work experience gained by students before joining their programs ranked in descending order according to the number of students was as follows:

1. Sales work
2. Construction work
3. Farm work
4. Wood work/carpentry
5. Grocery work

6. Electrical/electronics
7. Air conditioning/central heating/plumbing
8. Car/truck driving
9. Metal work
10. Restaurant work

In regard to relationship between student's characteristics and educational category, data revealed that there is a significant relationship between student's age, community size, percentile rank, family income, head of household occupational title, and work experience and the educational category. That is, students in the educational categories differ significantly along these six characteristics. On the other hand, Students' father's educational level and mother's educational level not significantly different for student groups according to the educational category in which they were enrolled.

Concerning relationship between students' characteristics and the training program they had selected, data indicated that there is a significant relationship between student's age, family income and work experience and the students' training program. These characteristics are significantly different for student groups according to training programs in which they were enrolled. Data revealed also that there was no significant relationship between students' community size, father's educational level, mother's educational level, head of household occupational title and students' training program. These characteristics are not significantly different for all student groups regardless of the training program which students had selected.

Students' Aspirations and Expectations

Data related to educational category in which students were enrolled and the order of this category in the ninth grade choice form revealed that approximately one half of all students were in an educational category of their first choice, one seventh of all students were in their second choice, and one seventh of all students were in their seventh choice. Approximately three fourths of ISS students were in their first choice; about one fifth were in their second choice. Approximately one third of TTC students were in their first choice, and one fifth were in their seventh choice. About one fourth of ATC students were in their first choice, and one fourth were in their seventh choice.

In regard to students' willingness to change their educational category, data revealed that about 81 percent of all students would not like to change their educational category. Approximately one tenth of ISS students wanted to change to academic education, and one seventh of TTC students wanted to change to industrial education.

Concerning willingness to change their training program, data indicated that about 61 percent of all students would not like to change their programs. The five most popular programs to which students wanted to change, ranked in descending order were as follows:

1. Diesel Mechanic
2. Central Heating
3. Refrigeration
4. Automechanics
5. Radio and TV.

Most students did not want to change their programs. Data revealed that 81 percent of central heating, 70 percent of carpentry, 61 percent of

electrical, 55 percent of automechanics, and 45 percent of welding students would not like to change programs.

Data pertaining to all students' future goals revealed that goals ranked in descending order were as follows:

1. Complete 2-year polytechnic institute
2. Complete 4-5 year professional college
3. Go to work
4. Seek advanced training
5. Plan to sit for GSECE
6. Join the military

For ISS students only, these goals were ranked as follows:

1. Complete 4-5 year professional college
2. Complete 2-year polytechnic institute
3. Seek advanced training
4. Go to work
5. Join the military
6. Plan to sit for GSECE

But for the TTC and ATC students these goals were ranked as follows:

1. Plan to sit for GSECE
2. Go to work
3. Seek advanced training
4. Complete 2-year polytechnic institute
5. Complete 4-5 year professional college
6. Join the military

Conclusions

The major conclusions drawn from the overall findings of this study

of students enrolled in industrial education and training programs in the East Bank of Jordan in fall of 1983 were as follows:

1. Industrial education and training serves students of regular school age and from all strata of people in the East Bank of Jordan.

2. Social relations have stronger influence than institutional relations on student decisions about vocational choice.

3. Prevocational education and extracurricular activities in the preparatory school are not fulfilling their main objectives of providing students with wide vocational options and increasing their awareness of the world of work.

4. Current guidance and counseling services and activities in public media are not effective in helping students in decision-making regarding their career and vocational choice.

5. The procedure of placing students in their educational category after the ninth grade is adequate; whereas, the procedure for choosing a training program is not satisfactory.

6. Training environment has little impact on forming future goals of trainees.

7. Personal goals of all students in industrial education and training are not consistent with the primary goal of the system itself. that is, to go to work in the area of preparation after graduation . The inconsistency is more pronounced for students with above average academic ability than those of average and below average ability.

Recommendations

Based upon the findings and conclusions of this study, the following recommendations are offered to policy makers, administrators,

instructors, and teachers for the purpose of strengthening industrial education and training and for better support services for their students.

1. Major effort is necessary to develop a guidance and counseling system to help students in career and vocational decision making. It is further recommended that the following strategies be utilized:

A. Undertake inservice training of preparatory school principals and selected teachers on the essential aspects of counseling so as to enable them to assist students in their career choice in the absence of professional counselors.

B. Offer university preparatory programs in vocational counseling and guidance education to support counseling and guidance services in the preparatory and secondary schools.

C. Establish career centers in every office of education in each district so that counseling services are available to every school.

D. Strengthen the counseling and guidance division in the main office with additional professional personnel so that they can collaborate more fully with other departments.

E. Increase the number of publications for use by students and parents to increase their awareness of opportunities in vocational education.

2. There is a need for reconsideration of curriculum content and teaching practices of prevocational education so that a greater influence will be felt by students as they explore the world of work while at the same time increasing their awareness of options in vocational education. Furthermore it is critical that programs of industrial education and training introduce the importance of work values and the role of trained

manpower in industry.

3. The Directorate of education, together with instructional television, guidance and counseling services, and the public relations divisions, should intensify the use of public media as a means of assisting student decision making regarding career and vocational options.

Recommendations for Further Research

1. Followup studies are needed for graduates of industrial education and training to at least determine the following information:

A. If graduates are working in the fields they trained for;

B. The adequacy of their training for the work they are performing from the perspective of both the worker and the employer.

2. A study is needed to identify causes of student dissatisfaction with selected training programs of industrial education and training.

Modification of the existing procedures in keeping with the recommendations of this study should lead to improved student decision making and hopefully more efficient and effective use of Jordan's resources. Moreover, continued research as recommended above can further the effectiveness of the overall industrial education program in Jordan.

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APPENDIX A

DEFINITION OF TERMS

The following terms are used in the context of the educational system in Jordan:

Law of Education: The Law of Education No. 16 of 1964 in Jordan or "The Culture and Education Law of 1964" lays down the general philosophy, aims and obligations of education in Jordan reflecting the spirit of the constitution of the Hashimite Kingdom of Jordan (Arabiyat, 1975).

Ministry of Education (MOE): A central governmental body whose role is responsibility for public education in Jordan. MOE is the principal agency for education, regulating and controlling the education provided by all agencies in all schools in the country, with the exception of the Universities in Jordan.

Board of Education: A National Board of Education in Jordan established in 1964. It works as an advisory body to the Minister of Education in most education-related matters. One of the Board's most important responsibilities is to advise on policy in regard to curriculum matters. The Board is composed of sixteen members appointed by the cabinet, and includes representatives from MOE, the National Planning Council, the Civil Service Commission, the Youth Welfare Organization, the private sector, parents, and teachers. The purpose of the Board is to ensure continuity in educational policy and efficiency in educational administration.

Vocational Training Corporation (VTC): An autonomus body established in 1976 by Law No. 35 to contribute towards the fulfillment of the Five-Year Development Plan in the field of manpower development. A Board of Directors headed by the Minister of Labor includes: the Director General; two independent board members; and representatives of the Ministries of Labor, Education, and Public Works, the Chamber of Industry, Engineering Association, National Planning Council, and General Labor Union.

The major objectives of VTC are in the two main fields of vocational training and occupation standards. Vocational training primarily trains manpower up to the level of skilled worker through apprenticeship schemes which use training facilities provided by industrial establishments (VTC, 1982).

United Nations Relief and Works Agency (UNRWA): An agency administratively responsible for implementation of vocational programs for the Palestine Arab refugee communities since 1950. UNRWA is under the technical supervision of UNESCO. UNRWA/UNESCO educational services follow the same structure, curricula, and textbooks as those established by the Ministry of Education (UNESCO, 1980).

Preparatory Level: In Jordan the twelve school years are divided into the elementary level of six years, the preparatory level of three years, and the secondary level of three years. The nine years of the elementary and preparatory levels constitute the compulsory years of education (Arabiyat, 1975).

Industrial Education and Training: A type of vocational education offered after compulsory education is completed. Industrial education and training, which lasts for two to three years, is concerned with training male students in one of the three industrial trade categories defined below.

Industrial Secondary School (ISS): A vocational school where students train for a period of three years. The first year is general skill training followed by two years in one of the specialized programs. Training is provided up to the Craftsman worker level. At the end of the third year students sit for the General Secondary Education Certificate Examination.

Trade Training Center (TTC): A vocational training center established separately, annexed to a general school, or making use of workshop facilities in an industrial school/technical institute. TTC provides training in industrial trades up to skilled worker level for students joining the center after grade nine, and for a period of two years.

Apprenticeship Training Center (ATC): A type of vocational training provided after compulsory education to train students up to the skilled worker level. Training takes place in classical institutional workshops for a short period and on-the-job, in addition to the normal classroom teaching, and lasts for a period of two to three years.

Students: Those attending ISS, TTC, or ATC as full time students in one of the programs.

Characteristic: A trait, quality, or property that distinguishes an individual or group of individuals.

APPENDIX B

THE EDUCATIONAL SYSTEM IN JORDAN

General Principles

Education in Jordan is covered by the Law No. 16 of the year 1964. According to this Law (MOE, 1964) education in Jordan is free for all. It is compulsory in the first nine years of schooling; that is, in the primary and preparatory cycles, for the age groups 6-11 and 12-14. Girls and boys have equal opportunities to learn and there is no discrimination in education among people of different creeds or religions.

The Ministry of Education (MOE) is the principal authority for regulating and controlling education provided by all agencies in all schools in the country with the exception of university education and some specialized post secondary institutes within other governmental agencies or ministries (MOE, 1977). Education is provided by both public and private sectors. For the scholastic year 1981-82, the MOE Schools accomodated 72.2 percent of the total school enrollment, the United Nations Relief and Works Agency (UNRWA) 16.9 percent , the private sector 9.98 percent, and less than 1 percent by other government agencies. The MOE budget increased 8.2 fold in the last 10 years, and it was 8 percent of the total state budget for 1982 (MOE, 1981b).

UNRWA, through an agreement arranged with the Government of Jordan, provides education for the Palestinian refugee children in the first nine years of education, then qualified students can pursue their

secondary education in other schools except for one vocational training center at Wadi Sir, where vocational training is provided in the secondary and post-secondary level (UNESCO, 1980).

The East Bank of Jordan is divided into five Departments, each one headed by a Director of Education. The department can have several offices of education which supervise schools in different districts. Major decisions concerning curriculum, textbooks, and recruitment of teachers are still the responsibility of the central office of the Ministry of Education in Amman.

The General Committee of Education supervises all educational projects of the MOE, approves general policy, prepares draft laws and regulations, and supervises public examinations at different levels. This committee includes the Minister of Education as chairman, the Secretary General of the MOE, and all directors of education in governorates and the central office.

The Board of Education was established in 1959 to ensure the stability and continuity of the general educational policy and the smooth running of the educational system. The Minister of Education is the chairman of the board. The Board includes 16 members who represent different government and private agencies.

Educational Ladder

Figure 3 shows the educational ladder in Jordan. There is compulsory education for six years plus preparatory education for three years. Secondary education lasts for three years for the majority of other tracks, while post-secondary varies from 1-3 years for community colleges, and 4-7 years for university studies.

Preparatory education in grades seven through nine includes both academic and prevocational programs. Upon entering grade seven, students are given a choice of industrial, commercial, or agricultural programs, in addition to normal academic courses (Arabiyat, 1975). The objective of prevocational education as stated by the Law of Education 1964, Article No. 11, Section 9 was as follows:

> Discovering the inclinations, capabilities and abilities of the students in order to determine at the end of this stage the direction which they should follow in the later stages, whether general education (academic), vocational education, or to start work (MOE, 1964, p. 7).

In 1979, the Board of Education adopted a new policy to introduce a new integrated program of pre-vocational activities into all the compulsory education, and to replace previous prevocational education in the preparatory years. The content of these new prevocational activities included the following subject "Clusters" (UNESCO, 1980):

a. environment and energy studies;
b. industrial activities (metal, wood, electricity);
c. agricultural activities;
d. commerce and management activities;
e. housekeeping and personal glamour activities;
f. family life and social relations; and
g. hygiene, safety, food and nutrition, and public health (p. 7).

The objectives of the pre-vocational studies were (UNESCO, 1980):

i. to develop positive attitudes toward manual labour;
ii. to provide students with exploratory and guidance opportunities;
iii. to lay a foundation for vocational secondary education; and
iv. to strengthen the relationship between school and the world of work (p. 7).

Program Selection and Tracking of Students

At the end of ninth grade all students in each school in Jordan are put in rank order according to performance. The rank of each student is

then weighted by the total number of students in the ninth grade in that school. At the same time, each student is asked to put in order of preference his or her choices for secondary education or training. Up to seven preferences are allowed (UNESCO, 1980). For male students, the available choices are general education; vocational education of industrial, agricultural, business or postal education; or vocational training in trade training centers of MOE or UNRWA, apprenticeship training centers of Vocational Training Corporation (VTC), or training centers of the military (see Figure 3).

The Planning Section in MOE Central Office and in Departments of Education distribute available places in vocational education among districts and schools. Then offices of education undertake an extensive exercise to allocate the students to the various secondary education and training institutions. In order to make the allocations, the weighted ranks of all students are consolidated. Students with the highest weighted ranks are allocated to the institutions of their choice, and so on down the ranks until places for that school are filled, then the second choice is brought in, and so on through third and fourth choices until all the places are filled. Any unplaced students are expected to enter the labor market (UNESCO, 1980).

One of Jordan's educational policies is to prepare graduates of secondary education to participate in the country's economic development by using their vocational skills. This can be fulfilled by expanding vocational education so that male students enrolled in vocational programs will total 35 percent and female students will total 20 percent of the enrollment in the 10th grade by 1985 (Abdulhamied, 1980). To meeet this objective, MOE issued regulations for enrollment in the

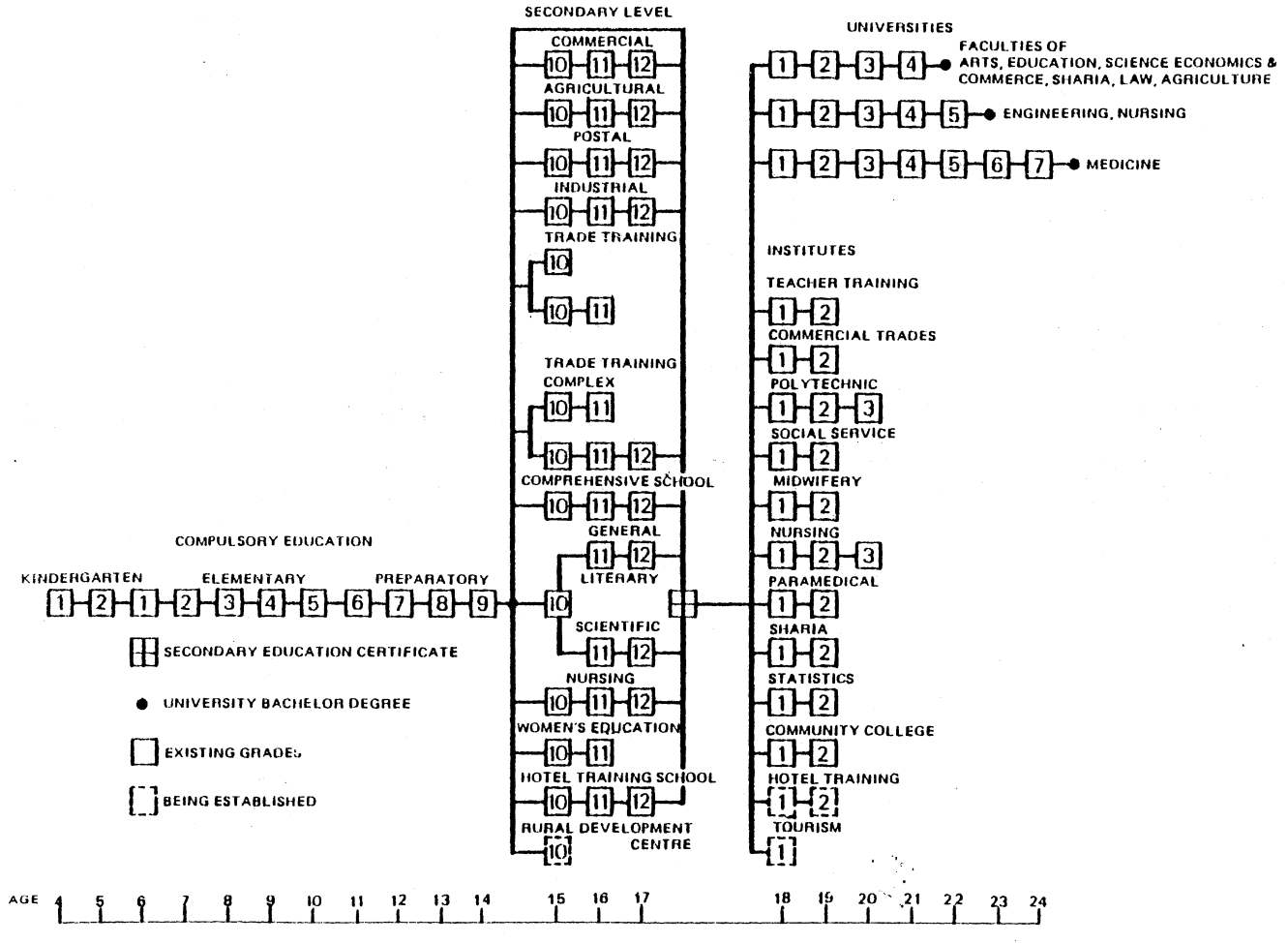

Figure 3. Structure of the Educational System in Jordan, 1980

10th grade as follows:

1. Education at the secondary level is not compulsory.

2. The objective of education at the secondary level is to prepare skilled manpower needed by the society in Jordan for its development.

3. For the purpose of enrollment in the 10th grade, the following are considered:

   a. Student grades in the 9th grade are the basis for judging performance.

   b. All 9th grade classes in a school are considered one unit.

   c. Students are allocated in different types of education according to their interests and their ranks in their schools.

4. [The following are taken into consideration in allocating students]:

   a. The highest percentage allowed to enroll in 10th grade academic education should not exceed 70% for males and 80% for females of the total 9th grade students.

   b. The rest of students are tracked in available vocational education and training programs.

   c. Vocational education and training programs are open for all students.

   d. Students accepted in vocational education and training programs are not allowed to transfer to academic studies (Abdulhamied, 1980, pp. 127-128).

Guidance and Counseling Services

Ginzberg (1971) defined career guidance as

> a process of structural intervention aimed at helping individuals to take advantage of the educational, training, and occupational opportunities that are available.
>
> [The term] counseling denotes a professional relationship between a trained counselor and a client which is designed to help the client understand and clarify his view of his life space so that he may make meaningful and informed choices consonant with his essential nature and his particular circumstances in those areas where choices are available to him (p.10)

In Jordan guidance and counseling services for students did not exist in the public schools before 1969. In that year a counseling and guidance section was established and started with six counselors. In 1970 the services of this section were still limited to 13 schools in Amman. None of these 13 counselors was specialized in educational counseling, and the nature of their work was similar to that of a social worker rather than that of a counselor (Al-Tall, 1979). In 1981 counseling services covered 188 schools in all districts (Directorate of Education, 1982).

Recently a career and occupational guidance division has been established, and a comprehensive Student Vocational Guide to vocational careers for students in the preparatory and secondary levels was published (MOE, 1981a).

MOE had declared that the 1980s is the decade for improving education in Jordan. Therefore the guidance and counseling division planned the following activities during 1981:

1. Implementing a new policy for recruiting new school counselors taking into consideration their academic and vocational standing.
2. Specifying guidance and counseling supervisor's job description in offices and departments of education.
3. Forming a guidance and counseling team at school, which includes school principal, and some teachers besides the counselor himself.
4. Publishing a student guide to be used by those who are involved in student guidance and counseling.
5. Preparing brochures for educational and vocational programs in secondary schools and community colleges.
6. Preparing a teacher's guide which takes into consideration student's needs in the elementary, preparatory, and secondary levels.

7. Publishing directives for disciplinary action, including preventive and corrective measures. And, for the first time, the disciplinary council included representatives of parents and students in addition to school teachers and staff members (Directorate of Education, 1982, p. 8).

Still there are more efforts needed in this field where guidance should be integrated into the curriculum. Better trained staff are needed in the field of vocational career counseling; and the scattered efforts of various guidance-related services, such as psychological and social counseling, selection and placement, and tracer studies and follow-up, all should be gathered in one unit (UNESCO, 1980).

APPENDIX C

QUESTIONNAIRE

Directions:

Please read each question or statement carefully, and select the answer which is true for you. If you have any question about a particular item, feel free to consult with the person in charge. Be sure to answer all questions, and answer each question as honestly and accurately as possible. The information which you give will be treated confidentially.

PART A Student Information

Please fill in the blanks and answer the following questions:

For Computer use	Question
1 2 3 C P G	1. Your first name:---------- Your Father's name:----------
4 5 NO.	Your Family name:----------
6	2. Circle the number refering to your age at September 1st.,1983 1 - less than 16 years 2 - 16+ years 3 - 17+ years 4 - 18+ years 5 - 19+ years 6 - Over 20 Years
7	3. Circle the number of the educational category for which you are enrolling. 1-Industrial Secondary Education[ISS] 2-Trade Training [TTC] 3-Apprenticeship Training[ATC]

For Computer Use	Question
8Gov.	4. Name of the Industrial Secondary School [ISS],Trade Training Center [TTC] Apprenticeship Training Center [ATC] you are enrolling[----------] at,
9Dist.	City /Town [----------]
10instit	Governorate/School District[---------]
11	5. Circle the number of your training program you are enrolling 1 - Electrical [Utilization] 2 - Automechanics 3 - Central Heating 4 - Welding 5 - Carpentry
12	6. Circle the number of your grade level. 1 - 10th grade 2 - 11th grade 3 - 12th grade
13 14 Gov.Dist.	7. Name the school at which you completed the 9th grade[----------].
	City/Town [----------]
15 16 school	Governorate/School District[-------]
17	8. Circle the number of the year in which you completed the 9th grade. 1 - 1983 2 - 1982 3 - 1981 4 - 1980 5 - 1979 6 - 1978
18 19	9. Your percentile rank at 9th grade was [----------]
20	10.Circle the number indicating the size of the town where you have completed the 9th grade. 1 - below 2000 2 - from 2001 to 5000 3 - from 5001 to 20000 4 - from 20000 to 50000 5 - larger than 50000

For Computer Use	Question

11. Please mark [X] at the educational level attained by each of your parents.

21 Father

22 Mother

Educational level	Father	Mother
1 -No formal education	[ ]	[ ]
2 -Elementary education	[ ]	[ ]
3 -Preparatory education	[ ]	[ ]
4 -Academic Secondary education	[ ]	[ ]
5 -Vocational Secondary education	[ ]	[ ]
6 -Community/technical college	[ ]	[ ]
7 -University education	[ ]	[ ]

12. Write the occupational title of the head of your household (----------).He works for(----------).

23 Circle the number of category it fits in the following:

1-Unskilled worker(farm/building worker)
2-Semi-skilled worker (truck driver, machine operator)
3-Skilled worker(foreman, machinist,..)
4-Technician (nurse, surveyor,....)
5-Administrator(manager, merchant,---)
6-Proprietor (businessman, farm owner, government official,----------)
7-Professional (physician, engineer, Pharmacist----------)
8-Others (specify)(----------).

13. Please estimate your family income from salaries, wages, self-employment, and/or any other income for one year. Circle the number

24 of the correct answer.

1- less than $ 3000
2- from $3001 to $6000
3- from $6001 to $9000
4- from $ 9001 to $12000
5- from $12001 to $ 15000
6- from $15001 to $ 18000
7- from $18001 to $ 21000
8- from $21001 to $ 24000
9- more than $ 24001
10- I don't know

For Computer Use	Question

Please circle one (1) for yes or two (2) for no for all types of the following work experiences which lasted for more than one month other than school experiences (paid or unpaid) which you have gained before you joined your training program.

		Yes(1)	No(2)
25	14.Sales Work	1	2
26	15.Clerical Work	1	2
27	16.Restaurant Work	1	2
28	17.Grocery Work	1	2
29	18.Farm Work	1	2
30	19.Car Cleaning	1	2
31	20.Car/Truck Driving	1	2
32	21.Automechanics	1	2
33	22.Construction Work	1	2
34	23.Woodwork/ Carpentry	1	2
35	24.Electrical/ Electronics	1	2
36	25.Metal Works	1	2
37	26.Air conditioning/Central Heating/Plumbing	1	2
38	27.Others (specify)(--------)	1	2

PART B Factors Influencing Your Choice of the Program in Which you Are Enrolled.

Circle the degree of influence the following factors had on your decision to select the training program in which you are enrolled.

For Computer Use	Influencing Factor	Amount of Influence: Very Great	Great	Moder-ate	Little	Very Little	Does not Apply
	I- People						
39	28. Parents	5	4	3	2	1	0
40	29. Brothers/Sisters	5	4	3	2	1	0
41	30. Relatives	5	4	3	2	1	0
42	31. Counselor	5	4	3	2	1	0
43	32. School Principal	5	4	3	2	1	0
44	33. Teachers	5	4	3	2	1	0
45	34. Graduates	5	4	3	2	1	0
46	35. School Mates	5	4	3	2	1	0
47	36. Friends	5	4	3	2	1	0
48	37. People Working in the Occupation	5	4	3	2	1	0
49	38. Vocational Teachers	5	4	3	2	1	0
50	39. Others (specify) (----------)	5	4	3	2	1	0
	II-Sources of Information						
51	40. Prevocational Education	5	4	3	2	1	0
52	41. Vocational Guide Book	5	4	3	2	1	0
53	42. Articles in newspapers or magazines related to the program	5	4	3	2	1	0

For Compute Use	Influencing Factor	Amount of Influence: Very Great	Great	Moder-ate	Little	Very Little	Does not Apply
54	43. Radio or TV program on career occupation	5	4	3	2	1	0
55	44. Films viewed on training facilities	5	4	3	2	1	0
56	45. Visiting workshops at school-center-factory	5	4	3	2	1	0
	III - Economic Factors						
57	46. Availability of boarding facilities	5	4	3	2	1	0
58	47. Wages earned during training	5	4	3	2	1	0
59	48. Partial employment possibility outside school time	5	4	3	2	1	0
60	49. Work availability after graduation	5	4	3	2	1	0
61	50. Earning potential after graduation	5	4	3	2	1	0
	IV - Personal and General Factors						
62	51. Interest in the program	5	4	3	2	1	0
63	52. Work experience in the field of your program	5	4	3	2	1	0

64	53. Low grades in Math and Science	5	4	3	2	1	0
65	54. Facility equipment	5	4	3	2	1	0
66	55. Reputation of faculty and institution	5	4	3	2	1	0
67	56. Home closeness to school	5	4	3	2	1	0
68	57. Father's occupatation	5	4	3	2	1	0

PART C - Student Aspirations

Answer the following questions:

For Computer Use — Question

---

69 58. Circle the number corresponding to your current educational category on the education choice form which you completed at the end of the 9th grade.

1- First choice 2- Second Choice
3- Third choice 4- Fourth choice
5- Fifth choice 6- Sixth choice
7- Seventh choice

70 59. If you were given a chance to change your educational category, what type would you choose?

Circle the appropriate number:

1- I would not change
2- I would choose Hotel Education
3- I would choose Agricultural Education
4- I would choose Postal Education
5- I would choose Business Education
6- I would choose Academic Education
7- I would choose Industrial Education
8- I would choose Trade Training in MOE or UNRWA
9- I would choose Apprenticeship training in VTC or in the Military

For Computer Use	Question

60. If you were given a chance to change your training program, circle the number you would choose.

71 72

01-Electrical (Utilization)	02-Electrical (Transmission)
03-Electrical (Generation)	04-Radio & TV
05-Telecommunications	06-Automechanics
07-Diesel Mechanics	08-Farm Machinary
09-Autobody Repair	10-Instrumentation
11-Office Machine Repair	12-Refrigeration & Air Conditioning
13-Central Heating	14-Machining
15-Engine Grinding	16-Welding & Forging
17-Plant Maintenance	18-Upholstry
19-Carpentry	20-Building & Shuttering
21-Plastering & Tiling	22-Others (Specify...)

Directions:

Students have different career goals after their graduation from industrial schools or training centers. The following are some of the possible future goals:

1-Go to work
2-Join the military
3-Seek advanced training
4-Plan to sit for general secondary education certificate examination (GSECE)
5-Complete 2- years polytechnic institute
6-Complete 4-5 years professional college
7-Others (please specify)(----------)

In order of your preference, using the above mentioned goals, write the suitable goal number which corresponds to the following statements:

61. My First and most important goal has the No.(---)

73

62. My second goal of importance has the No.(----)

74

63. My third goal of importance to me has the No.(---------)

75

64. My fourth goal of importance to me has the No.(--------)

76

65. My fifth goal of importance to me has the No.(--------)

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APPENDIX D

ARABIC TRANSLATION OF THE QUESTIONNAIRE

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استبيان لطلاب التعليم والتدريب الصناعي
في الاردن لسنة ٨٣-١٩٨٤

من فضلك اقرأ كل سؤال او عبارة بعناية واختر الاجابة الصحيحة بالنسبة لك.
اذا كان لديك سؤال عن اى بند لا تتردد ان تستشر الشخص المسؤول امامك ، تأكد من اجابة جميع الاسئلة واجب عن كل سؤال بامانة وبكل دقة ممكنة.

القسم الاول : معلومات عن احوال الطالب
ارجو تعبئة الفراغات والاجابة عن الاسئلة التالية :-

السؤال	رقم السؤال	لاستعمال الكمبيوتر
- اسمك الاول(.....)	-1-	1 2 3 4 5 C P G N O
- اسم الاب (.....)		
- اسم العائلة (.....)		
- ضع دائرة حول رقم الجواب الصحيح لعمرك في١/٩/١٩٨٣ 1 - اقل من ١٦ سنة 2 - + ١٦ سنة 3 - + ١٧ سنة 4 - + ١٨ سنة 5 - + ١٩ سنة 6 - +٢٠ سنة	-2-	6
- ضع دائرة حول رقم نوع التعليم/ التدريب الحرفي/ الذى انت فيه 1 - ثانوى صناعي 2 - تدريب حرفي 3 - تلمذة صناعية	-3-	7
اسم المدرسة الثانوية الصناعية/مركز التدريب الحرفي/ مركز التلمذة الصناعية / الذى انت فيه (.....) في مدينة / قرية (.....) في محافظة /لواء (.....)	-4-	8 Gov 9 Dist 10 Inst

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السـؤال	رقم السؤال	الاستعمال الكمبيوتر
- ضع دائرة حول رقم التخصص (الحرفة) الذى انت فيه 1- كهرباء (استعمال) 2- ميكانيك سيارات 3- تدفئة مركزية وادوات صحية 4- حدادة ولحام 5- نجارة .	-5-	11
- ضع دائرة حول رقم الصف (السنة) التي انت بها 1- السنة الاولى 2- السنة الثانية 3- السنة الثالثة	-6-	12
- اسم المدرسة التي انهيت الثالث الاعدادى بها (.....) في مدينة /قرية (.....) في محافظة /لواء (.....)	-7-	13 14 15 16 Gov Dis Sch'l
- ضع دائرة حول الجواب الصحيح لتاريخ انهائك الصف الثالث الاعدادى في حزيران من السنوات التالية :- 1 - ١٩٨٣ 2 - ١٩٨٢ 3 - ١٩٨١ 4 - ١٩٨٠ 5 - ١٩٧٩ 6 - ١٩٧٨	-8-	17
- رتبتك المئينية في الصف الثالث الاعدادى (.....)	-9-	18 19
- ضع دائرة حول الرقم الذى يشير الى عدد سكان القرية / المدينة التي انهيت الصف الثالث الاعدادى بها :- 1 - اقل من ٢٠٠٠ نسمه 2 - بين ٢٠٠١ و ٥٠٠٠ نسمه 3 - بين ٥٠٠١ و ٢٠٠٠٠ نسمه 4 - بين ٢٠٠٠١ و ٥٠٠٠٠ نسمه 5 - اكبر من ٥٠٠٠٠ نسمه	-10-	20

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لاستعمال الكمبيوتر	رقم السؤال	السؤال
21 Father	-11-	- ضع علامة (x) مقابل مستوى التعليم الذي وصل اليه كل من من ابيك وامك المستوى — الاب — الام 1- بلا تعليم رسمي .....( ) ( ) 2- تعليم ابتدائي .....( ) ( ) 3- تعليم اعدادي .....( ) ( ) 4- تعليم ثانوي(اكاديمي) :.....( ) ( ) 5- تعليم ثانوي (مهني).....( ) ( ) 6- تعليم جامعي متوسط .....( ) ( ) 7- تعليم جامعي .....( ) ( )
22 Mother		
23	-12-	- اذكر مهنة ولي الامر _____ الذي يعمل في ..... ضع دائرة حول رقم مستوى مهنة ولي الامر 1 - عامل غير ماهر (مثل عامل في مزرعة /عامل بناء/آذن) 2 - عامل شبة ماهر (مثل سائق شاحنة، مشغل الة ..) 3 - عامل ماهر (مثل مراقب في مصنع، موظف .....) 4 - عامل فني (مثل مساح، ممرض.....) 5 - اداري (مثل مدير، تاجر .....) 6 - ملاك (مثل رجل اعمال، صاحب مزرعة ، .....) 7 - متخصص (مثل طبيب ، مهندس، صيدلي .....) 8 - غيرها (حدد من فضلك .....)
24	-13-	- قدر دخل عائلتك بالدينار الاردني من الرواتب والاجور او اى مصدر كان خلال عام،ضع دائرة حول رقم الجواب الصحيح ؟ 1 - اقل من ١٠٠٠ (الف) دينار 2 - بين ١٠٠١ و ٢٠٠٠ دينار 3 - بين ٢٠٠١ و ٣٠٠٠ دينار 4 - بين ٣٠٠١ و ٤٠٠٠ دينار 5 - بين ٤٠٠١ و ٥٠٠٠ دينار 6 - بين ٥٠٠١ و ٦٠٠٠ دينار 7 - بين ٦٠٠١ و ٧٠٠٠ دينار 8 - بين ٧٠٠١ و ٨٠٠٠ دينار 9 - اكبر من ٨٠٠١ دينار 0 - لا اعرف.

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لاستعمال الكمبيوتر		رقم السؤال	السؤال		
			- ضع دائرة حول الرقم واحد(1) للاجابة بنعم او حول الرقم اثنين (2) للاجابة بلا مقابل كل خبراتك التي استمرت اكثر من شهر خارج المدرسة/مركز التدريب (باجر او بغير اجر) والتي اكتسبتها قبل ان تدخل تخصصك	نعم	لا
25		-14-	- اعمال بيع	1	2
	26	-15-	- عمل كتابي	1	2
27		-16-	- عمل في مطعم	1	2
	28	-17-	- عمل في بقالة	1	2
29		-18-	- عمل في مزرعة	1	2
	30	-19-	- مسح وغسيل سيارات	1	2
31		20-	- قيادة شاحنة او سيارة	1	2
	32	-21-	- عمل في ميكانيك السيارات	1	2
33		-22-	- عامل بناء	1	2
	34	-23-	- عامل في نجارة	1	2
35		-24-	- عمل في الكهرباء/اتصالات/الكترونيات	1	2
	36	-25-	- عمل في المعادن	1	2
37		-26-	- عمل في التمديدات الصحية، تكييف الهواء ، التدفئة المركزية	1	2
	38	-27-	- غيرها (حدد من فضلك .....)	1	2

القسم الثاني ـ العوامل المؤثرة على اختيار الطالب لحرفته (تخصصه)

ضع دائرة حول رقم احدى الدرجات الستة امام كل عامل من العوامل التالية والتي تعتقد انها اثرت على قرارك في اختيار الحرفة التي التحقت بها.

لاستعمال الكمبيوتر		رقم السؤال	العوامل المؤثرة	درجة تأثير العوامل					
				لا يؤثر	قليل جدا	قليل	معتدل	كبير	كبير جدا
			تأثير الناس						
	39	28	الوالدان	0	1	2	3	4	5
40		29	الاخوة والاخوات	0	1	2	3	4	5
	41	30	الاقارب	0	1	2	3	4	5
42		31	المرشد الاجتماعي	0	1	2	3	4	5
	43	32	مدير المدرسة	0	1	2	3	4	5
44		33	المعلمون الاكاديميون	0	1	2	3	4	5
	45	34	خريجو المدرسة	0	1	2	3	4	5
46		35	الزملاء بالمدرسة	0	1	2	3	4	5
	47	36	الاصدقاء	0	1	2	3	4	5
48		37	اناس يعملون بالمهنة	0	1	2	3	4	5
	49	38	المعلمون المهنيون	0	1	2	3	4	5
50		39	غيرهم (.....)	0	1	2	3	4	5
			تأثير مصدر المعلومات						
	51	40	التربية المهنية بالاعدادي	0	1	2	3	4	5
52		41	مرشد الطالب	0	1	2	3	4	5
	53	42	مقالات في جريدة او مجلة ذات علاقة بالمهنية	0	1	2	3	4	5
54		43	برامج الراديو والتلفزيون عن المهنية	0	1	2	3	4	5
	55	44	فيلم عن مرافق التدريب	0	1	2	3	4	5
56		45	زيارة لمشاغل المركز / المدرسة / المصنع	0	1	2	3	4	5

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لاستعمال الكمبيوتر		رقم السؤال		لا ينطبق	قليل جدا	قليل	معتدل	كبير	كبير جدا
			التأثير الاقتصادى						
	57	46	وجود قسم داخلي بالمدرسة /بالمركز	0	1	2	3	4	5
58		47	الاجور خلال التدريب	0	1	2	3	4	5
	59	48	احتمال العمل الجزئي خارج وقت الدراسة	0	1	2	3	4	5
60		49	وجود العمل بعد التخرج	0	1	2	3	4	5
	61	50	الدخل العالي المتوقع بعد التخرج	0	1	2	3	4	5
			التأثيرات العامة						
62		51	رغبتك في الحرفة (التخصص)	0	1	2	3	4	5
	63	52	خبرتك السابقة في التخصص	0	1	2	3	4	5
64		53	انخفاض معدلك في الرياضيات والعلوم	0	1	2	3	4	5
	65	54	جودة تجهيزات المدرسة المركز/ المصنع	0	1	2	3	4	5
66		55	سمعة المدرسة / المركز والهيئة التدريسية	0	1	2	3	4	5
	67	56	قرب منزلك من المدرسة	0	1	2	3	4	5
68		57	مهنة الوالد	0	1	2	3	4	5

القسم الثالث ـ طموحات الطلاب

اجب عن الاسئلة التالية :ـ

الاستعمال الكمبيوتر	رقم السؤال	السؤال
69	58	ـ ضع دائرة حول رقم نوع التعليم/ التدريب الذى انت فيه عندما عبأت نموذج الاختيار في نهاية الصف الثالث الاعدادى :ـ 1ـ الاختيار الاول 2ـ الاختيار الثاني 3ـ الاختيار الثالث 4ـ الاختيار الرابع 5ـ الاختيار الخامس 6ـ الاختيار السادس 7ـ الاختيار السابع
70	59	ـ اذا سنحت لك فرصة تغيير اختيار نوع التعليم/التدريب الذى انت فيه مرة اخرى، ماذا تختار في هذه الحالة؟ ضع دائرة حول الجواب المناسب :ـ 1ـ سوف لا اغير اختيارى 2ـ ساختار التعليم الفندقي 3ـ ساختار التعليم الزراعي 4ـ ساختار التعليم البريدى 5ـ ساختار التعليم التجارى 6ـ ساختار التعليم الاكاديمي 7ـ ساختار التعليم الثانوى الصناعي 8ـ ساختار مراكز التدريب الحرفي بوزارة التربية او بوكالة الغوث 9ـ ساختار مراكز التدريب الحرفي بمؤسسة التدريب المهني او بالقوات المسلحة
71 72	60	ـ اذا سنحت لك فرصة تغيير تخصصك الحالي، ضع دائرة حول رقم التخصص الذى ترغب التحول اليه . 01ـ كهرباء (استعمال) 02ـ كهرباء (نقل وتوزيع) 03ـ كهرباء (توليد) 04ـ راديو وتلفزيون 05ـ اتصالات 06ـ ميكانيك سيارات 07ـ ميكانيك ديزل 08ـ ميكانيك آلات زراعية 09ـ تجليس ودهان سيارات 10ـ آلات دقيقة 11ـ ميكانيك آلات كاتبة 12ـ تكييف وتبريد 13ـ تدفئة وادوات صحية 14ـ خراطة وتسوية 15ـ خراطة ومحركات 16ـ لحام وحدادة 17ـ صيانة ميكانيكية عامة 18ـ تنجيد 19ـ نجارة 20ـ بناء وتسليح وطوبار 21ـ قصارة وتسليط ودهان 22ـ غيرها (اذكر .....)

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السؤال	رقم السؤال	لاستعمال الكمبيوتر
ارشـــــــــادات		
تختلف اهداف الطلاب في الحياة وبعد تخرجهم من المدرسة الصناعية او مركز التدريب وفيما يلي بعض هذه الاهداف:-		
1 - التحق بالعمل		
2 - التحق بالقوات المسلحة		
3 - احاول ان احصل على تدريب صناعي اعلى		
4 - اخطط لتقديم امتحان التوجيهي الصناعي		
5 - اكمل دراستي لمدة سنتين في معهد بوليتكنيك		
6 - اكمل دراستي لمدة ٤-٥ سنوات بجامعة او كلية هندسة في تخصصي.		
7 - غيرها (حدّد من فضلك .....)		
حسب اولويات اختيارك وباستعمال الاهداف المذكورة اعلاه اكتب رقم الهدف مقابل كل جملة مما يلي		
هدفي الاول والاكثر اهمية لي هو برقم	61	73
هدفي الثاني حسب اهميته لي هو برقم	62	74
هدفي الثالث حسب اهميته لي هو برقم	63	75
هدفي الرابع حسب اهميته لي هوبرقم	64	76
هدفي الخامس حسب اهميته لي هو برقم	65	77

APPENDIX E

A REQUEST LETTER

المملكة الاردنية الهاشمية

وزارة التربية والتعليم

الرقم ٣/١٢٠ ٤١٧٨٩

التاريخ ١٤٠٣/١٢/٢٨

الموافق ١٩٨٣/١٠/٥

بسم الله الرحمن الرحيم

مدير عام مؤسسة التدريب المهني
مدير التعليم لوكالة الغوث الدولية/عمان
مدير عام دائرة التربية والتعليم لمحافظة

يقوم السيد احمد عطوان بدراسة لطلاب التعليم والتدريب الصناعي بالاردن ، لذا ارجو تسهيل هذه المهمة ليتمكن من جمع المعلومات وتعبئة الاستبيان الخاص بذلك من قبل الطلاب في المدارس الصناعية ومراكز التدريب الحرفي ومراكز التلمذة الصناعية .
هذا وسيقوم السيد المذكور بالاتصال بمدراء المدارس الصناعية ومراكز التدريب الحرفية المعنية لترتيب الوقت اللازم لزيارة وتعبئة الاستبيان الخاص بذلك بما لا يتعارض مع عمله الرسمي .

واقبلوا الاحترام ،

الوزير

نسخة/ لمدير العلاقات الثقافية
نسخة/ لرئيسة قسم البحث التربوي

ا.م/١

VITA 2

Ahmad Mohammad Atwan

Candidate for the Degree of

Doctor of Education

Thesis: SELECTED FACTORS INFLUENCING INDUSTRIAL EDUCATION AND TRAINING PROGRAM SELECTION BY JORDANIAN STUDENTS AND THEIR CHARACTERISTICS AND ASPIRATIONS

Major Field: Occupational and Adult Education

Biographical:

Personal Data: Born in El-khader, Palestine, September 5, 1939, the son of Mr. and Mrs. M. H. Atwan.

Education: Graduated from Bethlehem Secondary School, Bethlehem, Jordan, in June 1958; received Bachelor of Engineering Degree (Electrical) from the American University of Beirut in June, 1963; received Master of Science degree from Oklahoma State University in July, 1983, with a major in Technical Education; completed requirements for the Doctor of Education degree at Oklahoma State University in July, 1984.

Professional Experience: Teaching, Industrial Secondary School, Irbid, November, 1963, to August, 1966; Teaching, Royal Technical Institute, Riyadh, September, 1966, to August, 1969; Assistant Principal, Industrial Secondary School, Irbid, September, 1969, to July, 1972; Principal, Industrial Secondary School, Irbid, August, 1972, to July, 1974; Head of Industrial Education and Training Division, Ministry of Education, Amman, August, 1974, to August, 1981; Study Leave at Oklahoma State University, August, 1981, to present.

Professional Organizations: Jordan Engineering Association, Phi Kappa Phi, American Vocational Association.