

A FOLLOW-UP STUDY OF GRADUATES OF FIVE SECONDARY
TECHNICAL SCHOOLS AND INSTITUTES
IN SAUDI ARABIA

By

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CHAPTER I

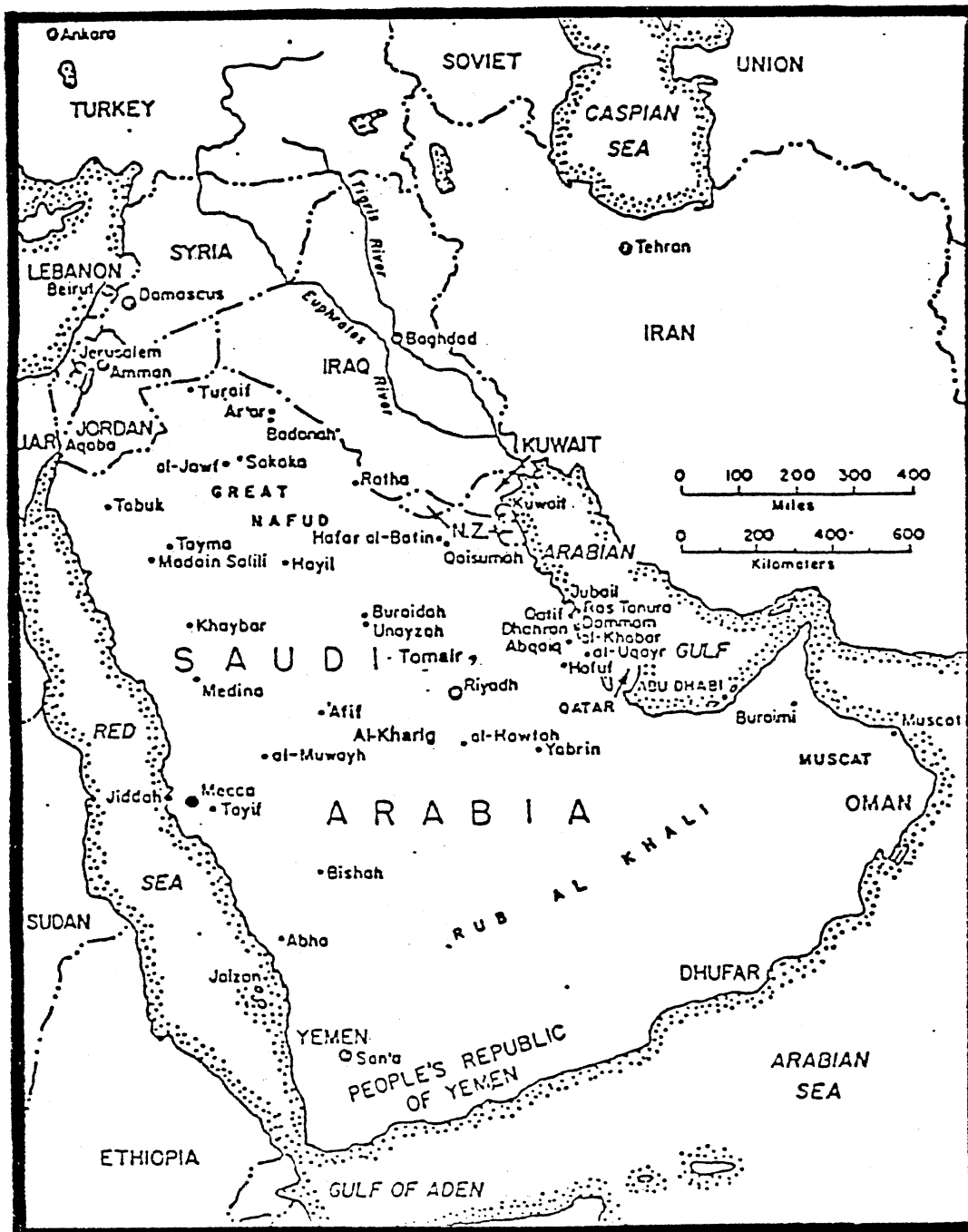
INTRODUCTION

Highlights of the Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia comprises about four-fifths of the Arabian Peninsula (Figure 1) which is slightly over a million square miles, or about one-third of the size of the United States of America (Aramco, 1968). The country is bounded by the Red Sea on the west, the Gulf of Aden and the Arabian Sea on the south, the Gulf of Oman and the Arabian Gulf on the east, and by Kuwait, Iraq, and Jordan to the north.

Saudi Arabia is divided into four geographical divisions which have been subdivided into administrative provinces. These four geographical divisions are Al-Hassa, Asir, Hijaz, and Najed. The government is a theocratic monarchy in which the constitution is the Holy Koran. Islam is the official religion and plays a dominant role in the lives of the people. The language is Arabic and the various regions of the Kingdom have distinctive dialects. English is acknowledged as a second language and is taught at all educational levels beyond primary education. In the urban areas and among the better educated it is widely understood.

Saudi Arabia was practically isolated from the modern world until very recently. With the discovery of oil in 1938, the petroleum



Source: Arabian American Oil Company, Aramco Handbook: Oil and the Middle East (1968).

Figure 1. Geographical Map of Saudi Arabia

industry rapidly became the major industry, providing the major part of the national income. In recent years, however, the government has placed increasing emphasis upon the development of other sources of income (Central Department of Statistics, 1969).

Saudi Arabia has been following a deliberate and evolutionary process in development. One of the most important elements to be developed was technical education. The Ministry of Education has been concerned with this type of education because a high proportion of the country's technical and skilled occupations were in the hands of foreign workers. The General Department of Technical Education was initiated in 1965, and took responsibility for technical, industrial, commercial, and agricultural education in the country. This department, as an extension of the Ministry of Education, has established a plan for developing technical education to provide the kingdom with qualified workers and skilled technicians.

Nature of the Problem

The need for continual follow-up of graduates has been recognized as an essential ingredient in determining the adequacy and effectiveness of technical schools and institutes in several countries. There has been expressed need in Saudi Arabia that a follow-up study of technical education graduates be conducted. Saudi Arabia has recognized the need for such a study to help further develop and evaluate the adequacy of these institutional programs, and to identify their graduates' work skills and potentials. It is reasonable that the opinions of the graduates who are products of

these institutions would be valuable in determining the adequacy of technical programs.

Purpose of the Study

The purpose of the study was to conduct a follow-up study of graduates of five secondary technical schools and institutes in Saudi Arabia. Subjects were sampled from individuals who graduated from five secondary technical institutions in Saudi Arabia from academic year 1975 through 1980. Specifically, this study sought to answer nine questions:

1. What are the job titles of graduates?
2. What is the monthly salary of graduates?
3. Are graduates working within the same field of speciality in which they were trained?
4. Did graduates continue their higher education after graduation from technical institutions?
5. If they did, was it the technical education certificate that qualified them to be admitted to higher education institutions?
6. Did the graduates go through academic secondary education in order to secure a better qualification?
7. Did the graduates perceive themselves to be technically prepared and qualified to enter the work force from their speciality programs?
8. Do technical education graduates perceive themselves to have a significant advantage over persons with similar work responsibilities but who are not technical education graduates?

9. Would the technical education graduates recommend their technical program for others with similar ambitions?

Scope of the Study

This study is limited to the graduates of five technical institutions in Saudi Arabia. These five institutions are:

1. The Royal Technical Institute in the city of Riyadh
2. The Secondary Industrial Institute in Jeddah
3. The Secondary Technical and Vocational School in Madinah
4. The Secondary Industrial Institute in Dammam
5. The Secondary Technical and Vocational School in Al-Hoffuf

This study is also limited to the graduates of academic years 1975 through 1980. These institutions and the programs they offer are presented in Figure 2.

Definitions of Terms

Technical Education: In Saudi Arabia technical education is a secondary level program designed persons with knowledge and skill in technical speciality such as electrical, electronic, and mechanical fields.

Graduates: Any student of the technical education school who completed the prescribed program of studies as required by the department of Technical Education in Saudi Arabia.

Questionnaire: A set of questions that graduates of technical schools were requested to answer or respond to for the purpose of collecting information relevant to the study.

Institutions: In this study, institutions refers to the technical schools and institutes in Saudi Arabia.

Department		Mechanical Department			Electrical Department		Automotive Department			Radio/TV Department		Architecture Department	
		General Mech. Machine Tool	Fine Mech.	Metal Working Steel const.	Installation	Electro- Mechanics	Mechanic	Electro- Diesel	Diesel	Radio and Television		Draftsman	Supervision
Institutions and their Locations	city												
Royal Technical Institute	Riyadh	X	X	X	X	X	X	X	X	X	X	X	
The Secondary Voc-Tech School	Jeddah	X			X		X						
The Secondary Vo-Tech School	Madinah	X			X		X						
The Secondary Vo-Tech School	Alhoffuf	X			X	X	X	X	X				
The Secondary Vo-Tech School	Dammam	X			X	X	X						

Source: Ministry of Education, Technical Education Policy: Education Policy in the Kingdom of Saudi Arabia (1974).

Figure 2. Major Specialities Existing in the Five Secondary Technical Institutions Included in this Study

Follow-up: Follow-up refers to the gathering of information about former students through the use of a questionnaire. It is useful for program evaluation.

Non-technical graduates: In this study non-technical graduates refers to the students who went through an academic secondary education.

Curriculum: The course offerings which make up the program of instruction and experiences which students undergo within the framework of the residential school in general (Good, 1946).

Academic Secondary Education: Pertaining to the fields of mathematics, history, economics, foreign languages, and science.

Assumptions

The following assumptions apply to this study:

1. The responses of the graduates were valid expression of their opinions and interpretation of the questions.
2. Responses reflect true facts where facts were requested.

CHAPTER II

REVIEW OF LITERATURE

In comparison to many areas of study, there has been no research in the form of follow-up for technical education institution graduates in Saudi Arabia. Although there have not been many studies of technical education in Saudi Arabia other than government official reports, graduate follow-up research in other industrial countries such as the United States, and developing countries such as Pakistan, and Nigeria, can be expanded here; they will provide the theoretical framework for the present study. It seems, however, that a review of research in other related areas may help to lay the groundwork for such a study. A review of literature was made to determine the concepts of technical education, specifically the General Department of Technical Education in Saudi Arabia. Other areas included in this review of literature are technical education in Saudi Arabia, social attitudes toward Technical Education, and follow-up studies.

Technical Education in Saudi Arabia

The Ministry of Education's policy concerning the development of technical education stems from the desire of the higher authority in the Ministry to coordinate the different needs to the varied

sectors of the economy through the continuous review of technical and vocational schools, policies, and objectives.

According to the Ministry of Education (1974), a high priority is given to technical education. The technical policy has the following objectives concerning technical education:

The objectives of technical education is to supply the Kingdom in all fields and at all levels with qualified workers who possess solid faith, sound character and ability to perform the duties entrusted to them. Concerned educational authorities look after technical and vocational education in all its forms and provided it with technical and financial support. Special plans are set up to determine the Kingdom's needs for technical labor force at various levels and forms in order to attain self-sufficiency within a period to be defined in the light of existing resources. All other resources that can operate in this fields will be utilized. Technical and vocational curricula and plans are set up to achieve this purpose with special emphasis on flexibility and diversification to meet all needs and developments in the fields of knowledge and labor, and to acquire other skills, experiences and experiments. Concerned government authorities shall establish necessary institutions to meet the Kingdom's needs for workers in farming, business, industry, and other fields. Concerned educational authorities shall adopt all means of encouraging students to enroll in technical and vocational training. The State will open opportunities for graduates to work with companies, institutions, factories, and installations. The concerned Ministers shall adopt the necessary measures to provide work for graduates and organize their status (p. 30).

According to Alobaid (1979), the Ministry of Education has implemented a new project which had been approved by the Council of Ministers in 1963. The most important objectives of this project are:

1. To raise the capacity of institutions of the secondary level of technical education in the cities of Riyadh, Jeddah, Al-Hoffuf, and Madinah.
2. To set up two industrial institutions in the industrialized cities of Jeddah and Dammam.

3. To establish three secondary education units in Abha and Unizah.

4. Preparing theoretical and practical teachers.

According to Al-Motabagani, the director of the General Department of Technical Education in Saudi Arabia (1974) a new policy for technical education was adopted within the first five years plan in 1970. The objectives of this policy are:

1. Establishment of a technical school system must be based on educational training as well as industrial productivity.
2. Encouraging the concept of respect for vocational and manual work, and a place for those workers in society's development.
3. Technical education is to provide the quality of graduate technicians.
4. Increasing the quality of graduate technicians.
5. Basing the curriculum on technological change.
6. Expanding technical schools and training centers in the kingdom's villages for participation and the stoppage of internal immigration.
7. It is to provide graduates with the opportunity of furthering their education in their chosen fields.
8. Providing the graduates with full opportunities and options to continue their education.
9. Follow-up for graduates in order to provide them, as well as small industry, with counseling and guidance for the purpose of establishing vocational cooperative associations (p. 10).

However, in a practical way, almost none of these objectives have been achieved within the first five year period. Some of the objectives could not be achieved by the General Department of Technical Education itself for example objectives 7, 8, and 9.

Alaki (1972) conducted a study on industrial-vocational education in Saudi Arabia. He stated that the open system of technical

education, which was suggested by the General Department of Technical Education, has been in operation for the past few years.

This open system, symbolized in Figure 3, was expected to open the way to higher education in both the technical and the academic areas of study.

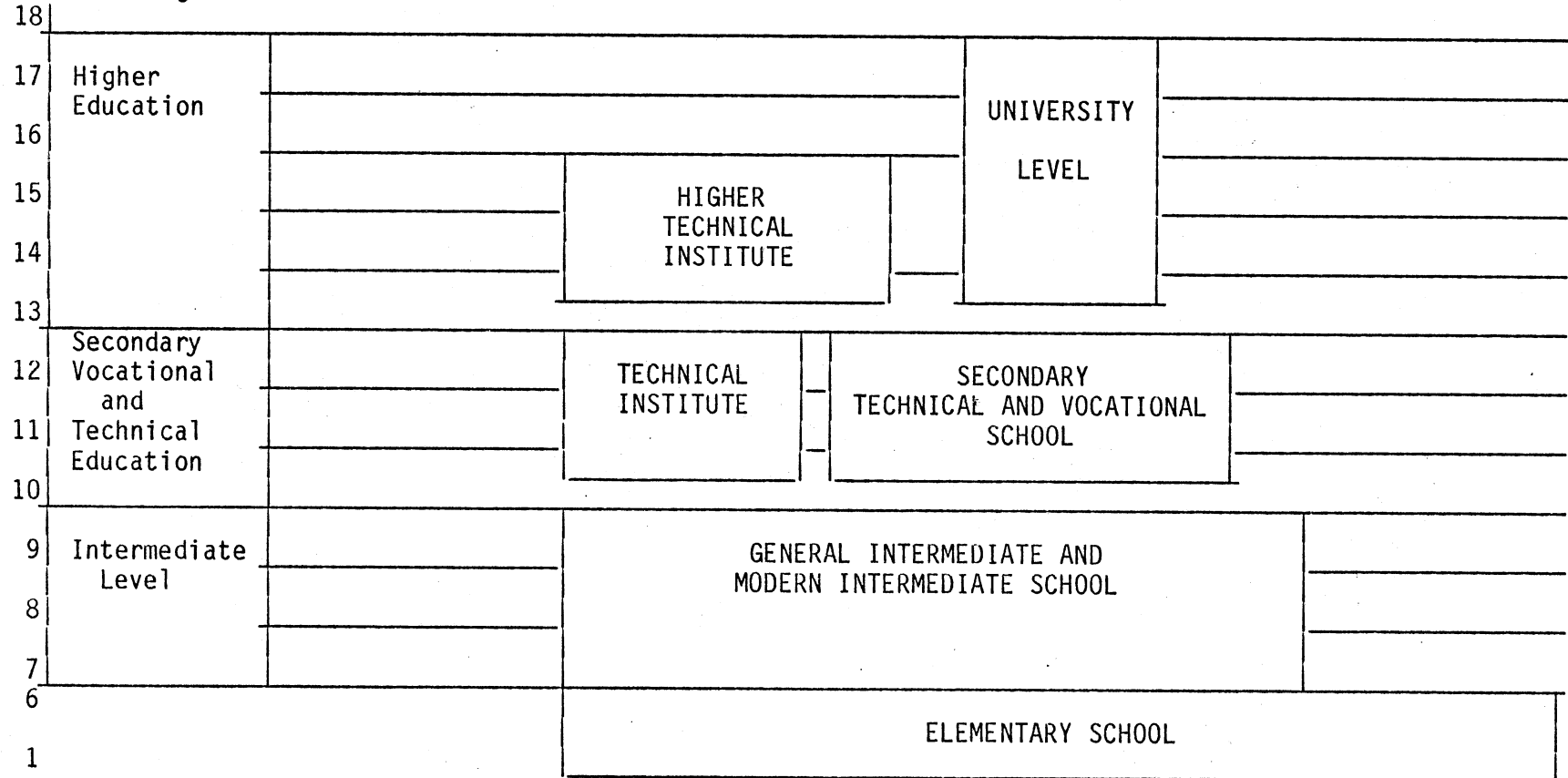
According to Almoula (1980), the term "open system" meant that students who moved from intermediate-level general education into secondary-level technical education faced a number of options. Beyond being able to choose from among industrial, technical, commercial, or agricultural education upon entry into the secondary level; at the 12th grade they could terminate with the Secondary Technical Certificate or continue on for as many as ten more years of technical education.

According to Ministry of Education (1979), this was accomplished through several options:

1. Technical-Vocational Institute; one year beyond the secondary level
2. Higher Technical Institute; four years beyond the secondary level
3. Four different programs of specialized study varying from three to five years beyond the secondary level
4. Industrial Education Institute; an institution of higher education, equivalent to the university level
5. Higher education, available in the University of Petroleum and Engineering (p. 7).

Alaki (1972) questioned whether the existing Saudi universities would accept the technical graduates. However, there is no established pattern by which technical graduates are accepted directly into any Saudi university, even though this possibility is provided for in the open system.

Years
of Schooling



Source: Ministry of Education, Technical Education Policy: Education Policy in the Kingdom of Saudi Arabia (1974).

Figure 3. Open System of Technical Education

The history of technical education programs in Saudi Arabia could be characterized as erratic, primarily because of a "trial-and-error" approach to this form of education. According to Al-Moula (1980), the trial-and error approach resulted in shifting emphasis within technical education and some rather dramatic changes in the actual numbers of students and schools during the period from 1960 to 1980. Al-Moula stated that:

. . . in the late 1970s, there was an upward trend in enrollment and program offerings, after a relatively protracted period of falling enrollments and offerings. This upward trend reflected reorganized thinking regarding technical education and the means through which it should be provided to the Saudi populace (p. 2).

He pointed out that an element of doubt still prevailed with regard to whether or not current activities in the field were adequate and appropriate.

Social Attitudes Towards Technical Education

Technical education in Saudi Arabia has the same pattern of problems that exist in the other developing nations around the world. Most of the outstanding challenges that face the technical education system in Saudi Arabia can be grouped into three categories:

(1) social problems, (2) educational problems, and (3) the problems arising from the lack of cooperation between industry and planners of technical education.

In the area of social problems, the low enrollment in the technical schools in Saudi Arabia was attributed to the aspiration of Saudi youth for university education. Student enrollment in the technical schools of the kingdom has been fluctuating in number since the establishment of such schools in 1949 (Ministry of Education,

1980).

According to AL-Hammad (1973, p. 37), the most critical problems that the technical education system faces are those related to the size of enrollment, the low quality of teachers and administrators, and the slow responses of the system in meeting needs of private sector. Al-Hammad also stated that "the low enrollments found in vocational schools result from educational and social problems." Educationally, academic education is far more appealing to the majority of students because it means good governmental positions upon graduation and enables them to pursue higher levels of education. Socially, technical education is unappealing because it implies, in the mind of the ordinary man, dirty hands and long hours of work and is assigned a low status.

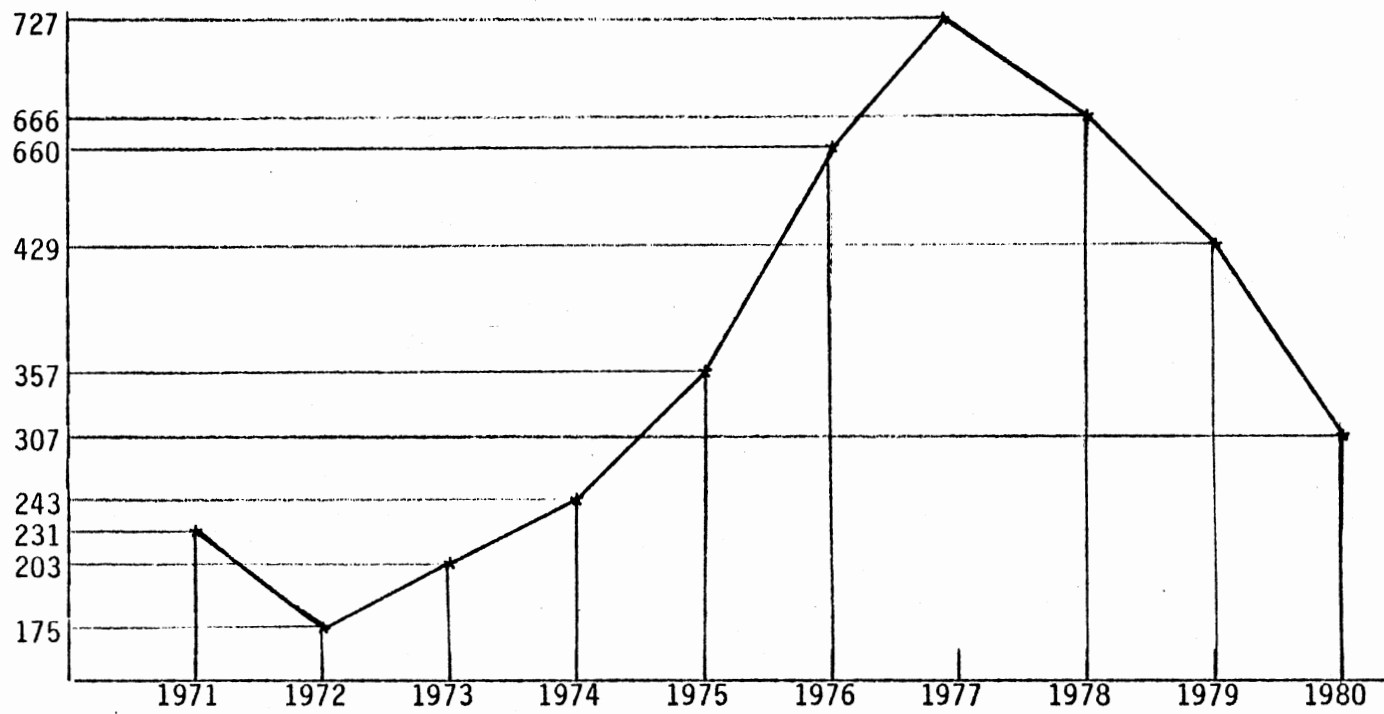
According to a statistical data forms of the Ministry of Education for the ten year span from 1971 to 1980 (Ministry of Education, 1980). Enrollment was 231 students in 1971. The number dropped to 175 by 1972. The enrollment increased to peak at 727 students by 1977. Following that year, enrollment declined to 307 students by 1980. Table I illustrates student enrollment for the 1971-1980 interval. The enrollment number is represented by the curve shown in Figure 4.

In Saudia Arabia technical education has not captured the aspiration of Saudi youth. As Alaki (1972) pointed out, academic education provides the opportunity for students to acquire higher education in universities. A graduate from a university can obtain a position with an excellent salary, especially with the government, which is the wish of the students. Since technical education does not offer its enrollees the opportunity of higher education and the possibilities of good government positions, it seems aimless for ambitious students to seek this

TABLE I

TEN YEAR AGGREGATE OF ENROLLMENTS AND GRADUATION OF THE TECHNICAL
EDUCATION INSTITUTIONS IN SAUDI ARABIA FROM 1971-1980

Class of Graduation	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Enrolled	231	175	203	243	357	660	727	666	429	307
Graduated	207	152	187	226	345	634	687	627	391	266
Percent Graduated	89.6	86.9	92.1	93.0	96.6	96.1	94.5	94.1	91.1	86.6



Source: Ministry of Education, Center of Statistical Data and Educational Documentation: A Statistical Review, 1970-1978 (1979).

Figure 4. Ten Year Aggregate Enrollment of Technical Education Institutions in Saudi Arabia From 1971-1980

type of education.

Another factor contributing to the undesirability of technical education are the views of society regarding manual work, especially in occupations that require long working hours and the use of hands.

Alaki (1972), pointed out that the most serious problems in technical education is the customary shift of some graduates from their present jobs that they have been trained for to other jobs that are completely new for them. The reason for these shifts are tribal traditions which deem manual work as undesirable; therefore, the social attitudes play a dominant role towards technical education in Saudi Arabia. Al-Jallal (1973), has pointed out that social attitude toward manual labor was noticed, but more plausible explanations were given. He stated that:

. . . it was noticed that despite the comparability of wages and fringe benefits between the government and the private sectors, government jobs were sought for the social prestige, the shorter hours work per day, and, above all, job security since the government seldom fires its employees (p. 12).

A large number of people who receive technical education seek jobs in government services because of the prestige and job security. As Knauerhase (1975, p. 28) pointed out ". . . the prestige attached to the job is very important in the choice of occupation. A man will accept considerably lower wages of a given job if he considers it socially more prestigious."

Theoretical and statistical information indicates that occupations which involve long hours, physical labor, and dirty hands are generally considered undesirable by most Saudi youths. On the other hand, occupations which require mental ability, ingenuity, and the use of sophisticated instruments and tools are considered as desirable.

Apropos to this matter, Lipsky (1959), states:

Manual labor generally is associated with very low status, while supervisory or policy-making functions carry prestige. . . . Work involving long hours, physical labor, and dirty hands, being generally abhorred by all "respectable" Arabs among both nomads and settled people, is usually performed by persons from low-status groups such as the nontribal Arabs and Negroes. The traditionally preferred employment of the upper social groups has been and continues to be government services . . . Even on the lower levels, government employees enjoy considerable respect in the eyes of the public (p. 63).

Al-Motabagani (1969) points out that social factors still play a significant role in the choice of occupations among the Saudi people, but he sees that the economic and social changes which have been taking place in the country during the past few years have contributed to some extent toward changing the views and values of the people regarding the choice of occupations. He further explained that at the present time among Saudi Arabians all electrical occupations are very much desired, all mechanical occupations are desired, all printing occupations are accepted, all construction occupations are accepted with hesitation, and barbershop occupations are not accepted.

Follow-up Studies

The responsibility of educators should not end when the student graduates. The need for follow-up study is an essential ingredient in determining the adequacy and effectiveness of an institution. The technical and vocational institution needs additional information about former students in order to improve the institution's effectiveness in serving the community and to improve student services at the institution. These former students serve as a valuable source of data, which could help in developing present and future program selection criteria.

For many years, institutions offering technical education programs in the United States have considered follow-up studies as an essential part of program evaluation. This benefit is not limited to self-evaluation purposes. Follow-up data is often required by local, state, or federal agencies which support the institution.

According to the Center for Vocational Education at Ohio State University (1978), it is usually necessary to collect data about both the process and the product of vocational programs in order to evaluate the programs. The Center for Vocational Education further explained that process evaluation deals with instructional processes and procedures, facility and equipment adequacy, and many other ways and means that may influence student outcomes. Product evaluation measures the effects of the vocational programs on its product--the students. The product data is normally gathered from one or two sources. Most common, and perhaps most valuable, is data from a student follow-up study.

The Center of Vocational Education (1978), stated:

Former students are in a unique position to comment on how well their high school or post secondary vocational or technical education courses prepared them to enter and advance in the world of work.

To get an accurate and complete picture for the purpose of program evaluation, studies should be reviewed which were conducted on students approximately one year and three years after their departure from the program (p. 13).

According to Devane (1975), the product of a technical education program is an employable person prepared to enter the occupation for which he is trained. The success and quality of a technical program can be determined by what happens to the students as they leave the program.

More emphasis is being placed on "product" evaluation rather than "process" evaluation. Berkey (1971) said:

The key to improving vocational programs is continued assessment of program effectiveness which means follow-up of graduates in the world of work. Process evaluation procedures typically used in the past, have had a useful function, but the 'proof of the programs' is the product (p. 198).

Drake (1970) agreed with this position. He stated:

When we apply such a 'process' approach, we assume that something is deficient in our procedures and methods. And this assumption is too often made prior to any systematic examination of our 'product.' It is the graduate we send away from our program that is the real proof of our accountability . . . And the performance of our 'product' is the vital objective of evaluation (p. 300).

Devane (1975), pointed out that the data obtained from follow-up studies have multiple uses such as:

1. To serve as a basis for curriculum modification.
2. To show employment trends, job mobility patterns, and rewarding career possibilities.
3. To evaluate the effectiveness of training courses currently being offered and of the guidance and placement program itself.
4. To upgrade the public image of vocational education, justify such programs, and to show the services provided by them.
5. To determine additional training courses that should be offered.
6. To make vocational education more responsive to student needs.

Marcus (1979), in emphasizing the importance of follow-up studies stated:

Rapid change in technology mandate continuous revision of technical institution. Feedback of information from recently employed graduates provides one of the best means of

obtaining an evaluation of the relevance of course content, institutional emphasis, and student advisement to the actual demands of employment (p. 15).

Williams (1971), pointed out that follow-up studies are valuable in supplying data that have a bearing on the status of programs and graduates; therefore, they provide data upon which changes can be made in programs and procedures essential to meeting the overall needs of students. Williams was of the opinion that follow-up studies were important to determine the relevance of course content to graduates from vocationally oriented programs. He stated:

The follow-up of graduates and former students is an important part of the self-evaluation of the community junior college . . . few studies are reported of vocationally trained graduates in finding employment in the area of their training and of their comparative success after placement(p. 15).

According to Little (1970), the importance of occupational follow-up was succinctly expressed in a quotation from the report of the Advisory Council on Vocational Education in the United States.

Effective occupational preparations are impossible if the school feels that its obligation ends when the students graduate. The school, therefore, must work with employers to build a bridge between school and work. Placing the students on a job and following up his success and failures provides the best possible information to the school on its strengths and weaknesses (p. 38).

According to Darcey (1980), follow-up studies have long been used to evaluate occupational programs and curricula because they lend themselves very well to the occupational set up. The studies of graduates supply information about former students such as job status, how well their program prepared them for their occupation, career interests and serve as a basis for evaluating occupational programs for improvement purposes aimed at bettering the program to meet student needs.

According to Darcey (1980), vocational legislation recommended that follow-up studies should be used intensively as a method of assessment of occupational programs. He further pointed out that the National Advisory Council for Vocational Education in the United States issued a statement urging schools and colleges offering occupational programs to consider their obligation to students as extending beyond graduation.

Gilli (1975), identified the following areas in which studies could supply assessment and decision-making data:

1. Curriculum relevancy as assessed by former students, at the time they are placed on their first jobs and several years later.
2. Overall value (both immediate and long term) of the program of former students.
3. Quality of training and education, as assessed by employers in term of their employees' performance on the job.
4. Determination of job characteristics (particularly in terms of activities oriented to people, data, and things).
5. Job satisfaction of former students and graduates with respect to continuing education.
6. Determination of the mobility characteristics of former students and graduates, with respect to both job mobility and geographic mobility.
7. Characteristics of former students and graduates with respect to continuing education.
8. Determination of other demographic data needed for long term decision making (p. 25).

In addition to the value in assessment and decision making, graduates may also benefit from follow-up studies. According to Brantner (1975), students graduating from vocational and occupational programs need continuing support from the institutions from which they

graduated. This continued contact of training institutions with their former students may be accomplished by using follow-up studies which serve to keep communication lines open.

According to Nelson (1964), an institution concerned with providing excellence in higher education must necessarily be concerned with its graduates. Nelson further extended such a "concern" for graduates into an active suggestion for a continuing, periodic follow-up:

Generally, a continuing, periodic follow-up procedure as a means of securing evidence pertinent to the evaluation and improvement of various programs in higher education is a wise endeavor. The alumni become more closely connected with and directly interested in their alma mater. The information obtained serves as one of the bases of analysis of the institution's programs. The institution gains fine public relation materials, and the data provides points for comparison with other institutions (p. 112).

The literature provides many examples of systematic student follow-up studies. Ballard (1969), conducted a follow-up study of the graduates of the technical education program at Oklahoma State University from 1960 to 1968. His study concerned salaries, career information, geographic data, and educational patterns of the graduates. Some of Ballard's study findings were:

1. The technical education graduates' career patterns were distributed evenly among careers in industry, business, and the military.
2. Eighty-nine percent of the technical education graduates intended to pursue an advanced degree.
3. The career objectives of all technical education graduates were evenly divided into careers in industry, business, and the military.

A similar study was conducted by Rutelonis (1972) as an extension and updating of the Ballard (1979) research. One significant result of Rutelonis' study concerned the respondents of Ballard's study who indicated that the graduates intended to pursue an advanced degree. During the four year span from 1968 to 1972, only 23.5 percent of the respondents actually had pursued an advanced degree. This tends to indicate that educational objectives had been superseded by career objectives or it may indicate that serious consideration had not been given to further academic advancement at the time the initial response was made.

According to Roberts (1976), a survey of new graduates is conducted annually by the University Placement Services of Oklahoma State University. Most of the survey data is collected when the prospective graduate receives his cap and gown, and is therefore limited to what a student knows about his future at the time of graduation.

Sparks (1977) published a review of technical education follow-up studies. His review was extensive and particularly interesting because it discussed the assertion that technical and vocational education should yield greater benefits than academic or general education because it costs more.

In his review of several national, state, and institutional studies, Sparks (1977) concluded that technical graduates are doing as well, and often better than, graduates of other curricula. These graduates are often more satisfied with their jobs than academic and general education graduates. Academic opportunities were found to be available for those graduates who chose to continue their education.

Adams (1971) published a report concerning the Pakistan technical education program at Oklahoma State University. The purposes of the report was:

1. To present a chronological record of events connected with the establishment and development of the three model polytechnic institutes,
2. To judge the extent to which the original objectives of the project were realized, and
3. To determine the degree of success of the various techniques used in the program. It was an evaluation of the effectiveness of the project.

Adams (1971), in his report, stated that:

It is equally important that the principal of each polytechnic institute also conduct a follow-up study of firms employing graduates. The purpose of the follow-up study would be to contact industries employing graduates to learn about their progress on the job. Employment information would be collected, such as type of jobs held by graduates, starting salaries, inplant training required, and opportunities for advancement. It is also important to secure an evaluation of the training program and to request suggestions for its improvement. This would also be a good opportunity to invite the company to suggest names of representatives to serve on an industrial advisory committee. The follow-up study should be conducted by personal interview, using a follow-up study form which includes a list of questions to be answered by an official representative of the company (p. 178).

Summary

In this review of literature, the need of conducting graduate follow-up studies has been recognized. Although graduate follow-up evaluation is only one approach to determining the effectiveness and adequacy of a graduate training program, there is overwhelming evidence that this area has been generally neglected. There were no

official follow-up studies conducted with technical education graduates in Saudi Arabia. A review in related areas contributed to the groundwork for this study.

The history of technical education programs in Saudi Arabia could be characterized as erratic, primarily because of the trial-and-error approach to this form of education. The Ministry of Education had planned to develop the technical education under the responsibility of the General Department of Technical Education. Objectives of technical education were reviewed and new policies have been stated in the review of literature. Some objectives could not be achieved by the General Department of Technical Education such as providing graduates with opportunities and options to continue their education, and providing graduates with counseling and guidance services after their graduation.

Technical Education in Saudi Arabia has the same pattern of problems that exist in the other developing nations around the world. Most of outstanding challenges that face the technical education system in Saudi Arabia arise from factors related to social attitude toward technical education.

Follow-up studies of the graduates of technical education programs at Oklahoma State University were reviewed. These studies were conducted by Ballard (1968) and by Rutelonis (1972). These studies dealt primarily with salary analysis and career patterns, although Rutelonis did perform a limited study dealing with program improvement.

The literature also reflected the need for follow-up studies. Many institutions offering technical education programs in the United

States have, for many years, considered graduate follow-up studies as an essential part of program evaluation. This technique is employed not only for self-evaluation purposes, but the follow-up data is often required by local, state, or federal agencies which support the institutions.

CHAPTER III

METHODOLOGY

The purpose of this study was to conduct a follow-up study of graduates of five secondary technical schools and institutions in Saudi Arabia. This study involved the graduates of the technical education schools and institutions in Saudi Arabia who graduated in the academic years 1975 through 1980.

This chapter is the description of the research procedure which was used in order to gather the necessary data for the study.

The procedure that was used in this study was divided into four sections: (1) Selection of the sample; (2) Development of the instrument; (3) Data Collection and (4) Analysis of data.

Selection of the Sample

The target population of this study was a sample of the graduates of five institutions in five different cities in Saudi Arabia who graduated between 1975 and 1980. These technical institutions are:

1. The Royal Technical Institute in Riyadh
2. The Secondary Industrial Institute in Jeddah
3. The Secondary Technical and Vocational School in Madinah

4. The Secondary Technical and Industrial Institute in Dammam

5. The Secondary Technical and Vocational School in Al-Hoffuf

According to the statistical printouts of the Ministry of Education for 1975-1980, the total number of technical education graduates was 2950 students (Ministry of Education, 1980).

The author initially intended to randomly select the study population sample from the total of 2950 graduates, but there were serious difficulties in obtainign the graduates' names and addresses. This was attributed to the loss in records continuity experienced in the transition of authorities, responsibilities, and records of technical education. Functions and organization structure of the General Department of Technical Education, (part of the Ministry of Education), became a separate entity, the General Organization for Technical Education and Vocational Training. Due to discontinuity of records, it was not possible to use random sampling techniques. The purposive sampling method was used to collect data for this study. The sample was obtained by two means:

1. Inquiring about the location of graduates in the major private establishments and government departments.

2. Seeking the help of individual graduates to identify their classmates.

The sample of this study, 456 graduates, represents 15.4 percent of the total number of graduates of 1975-1980. Distribution of the graduates among the five schools included in this study is presented in Table II.

TABLE II
DISTRIBUTION OF GRADUATES AMONG THE FIVE
SCHOOL BY YEAR OF GRADUATION

School Name	Year of Graduation						Total
	1975	1976	1977	1978	1979	1980	
The Royal Technical Institute in Riyadh	29	31	21	22	19	18	140
The Secondary Technical-Vocational School in Madinah	21	15	9	19	9	13	86
The Secondary Industrial Institute in Jeddah	10	9	8	16	8	7	58
The Secondary Technical-Vocational Institute in Dammam	10	13	9	10	12	8	62
The Secondary Technical-Vocational School in Al-Hoffuf	22	25	13	18	22	10	110
Total	92	93	60	85	70	56	456

Development of the Instrument

After consideration of the objectives of the study, a questionnaire was developed containing 24 questions was designed to be completed with a minimum effort. Open ended questions were developed to allow for individualized responses. The questionnaire was submitted to the advisory committee for review and recommendations. The questionnaire was pre-tested prior to mailing in order to determine whether the items were phrased to minimize bias or supposition on the part of the respondents, and whether there was simplicity and clarity if meaning. It was felt that this approach would minimize cultural bias, limit time demands in completing the form, and enhance the probability of higher percentage of returns. A copy of the questionnaire is included in Appendix A.

Data Collection

The instruments were mailed to research associates in Saudi Arabia in order to be distributed through the cooperation of employers. The population of the study included 406 graduates who were located in five different cities in Saudi Arabia. The remaining of the total of 456 individuals, 50 technical education graduates, were attending training schools in the United States. They were each sent a questionnaire with a letter explaining the purpose of the study and requested to reply. The letter emphasized the confidentiality of all information. Phone calls were used to initiate response from those graduates who did not respond to the original questionnaire. A sample of the letter is included in Appendix B.

Analysis of Data

All responses were tabulated and analyzed to find the mean, range, median, number, and percentages.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The purpose of this research was to conduct a follow-up study of graduates of five secondary technical schools and institutes in Saudi Arabia. The population for this study was comprised of graduates of five secondary technical institutions in Saudi Arabia from academic year 1975 through 1980.

A questionnaire was developed and pre-tested prior to mailing in order to determine whether the items were phrased to minimize bias or supposition on the part of the respondents, and whether there was simplicity and clarity of meaning. Copies of the questionnaires are included in Appendix A.

Table II shows the distribution of the graduates among the five schools included in this study breakdown by year of graduation.

Research Questions

Research Question 1

What are the job title of graduates?

Job titles of graduates were distributed as follows: Thirty one percent (7.24 percent) are supervisors, 23 (5.07 percent) are engineers, 217 (or 45.59 percent) are technicians. Table III shows that the job title, technicians, represents almost half of the

population's figures.

Data in Table III shows that 54 (11.84 percent) are assistant engineers, 17 (3.73 percent) are trainers, and 112 (24.56 percent) have job titles that are classified as "others."

As shown in Table IV, among those 112 graduates, there are nine secretaries, and nine students pursuing their higher education at the Higher Technical Institute in Saudi Arabia. There are three computer key punch operators, three flight engineers, 14 maintenance superintendents, 13 architecture draftsmen, five officers and seven lieutenants in the military, 16 turbine operators, 30 teachers, and three working in management of a transportation company.

Research Question 2

What is the monthly salary of graduates?

Table V represents the monthly salaries in Saudi Rials (S.R = \$.30). Of the 456 graduates, only four graduates, or 0.88 percent, who graduated in 1980 reported receiving the lowest salaries (3000-3500 S.R.). It was found that salary and time spent on the job had a kind of interdependency.

Interpretation of data patterns in Table V shows that graduates who had five years, six years, seven years, or more experience on the job tended to have higher salaries. On the other hand, the graduates with two to four years' experience tended to have lower salaries.

The graduates with only one or two years of experience tended to have higher salaries than the graduates with 3 to 4 years' experience. This may be explained by the fact that of the most recent graduates (1978 to 1980) were employed by either the Ministry of Defense, the

TABLE III
DISTRIBUTION OF JOB TITLES BY YEAR OF GRADUATION

Year	Supervisor		Engineer		Technician		Job Titles Assistant Eng.		Trainer		Others		Number of Respon.	Percent of Total Response
	N	%	N	%	N	%	N	%	N	%	N	%		
1975	2	0.44	16	3.51	34	7.45	8	1.75	1	.22	31	6.8	92	20.18
1976	7	1.54	3	0.66	56	12.33	5	1.10	9	1.98	13	2.86	93	20.39
1977	4	0.88	-	-	24	5.29	17	3.73	-	-	15	3.3	60	13.16
1978	8	1.75	4	0.88	42	9.21	4	0.88	5	1.10	22	4.82	85	18.64
1979	8	1.76	-	-	37	8.10	12	2.63	-	-	13	2.86	70	15.35
1980	4	0.88	-	-	24	5.29	8	1.75	2	0.44	18	3.96	56	12.33
Total	33	7.24	23	5.07	217	47.59	54	11.84	17	3.73	112	24.56	456	100.00

TABLE IV
TITLES OF GRADUATES POSITIONS

Position	Frequency	%
Teacher	30	6.57
Turbine Operator	16	3.50
Superintendent	14	3.07
Architecture Draftsman	13	2.85
Student	9	1.97
Lieutenant	7	1.53
Clerk	6	1.31
Officer	5	1.10
Computer Key Punch Operator	3	0.66
Flight Engineering student	3	0.66
Secretary	3	0.66
Total	112	24.56

TABLE V
DISTRIBUTION OF SALARY BY YEAR OF GRADUATION

Year	Salaries of Graduates in Saudi Rials														T							
	3000-3500		3501-4000		4001-4500		4501-5000		5001-5500		5501-6000		6001-6500		6501-7000		7001-7500		over 8000		O	%
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	T	%
1975	-	-	4	0.88	2	0.44	13	2.85	12	2.63	15	2.29	6	1.32	8	1.57	11	2.41	21	4.61	92	20.18
1976	-	-	8	1.75	12	2.63	16	3.51	20	4.39	8	1.75	5	1.10	4	0.88	10	2.19	10	2.19	93	20.39
1977	-	-	5	1.10	18	3.95	6	1.32	8	1.75	5	1.10	3	0.66	10	2.19	5	1.10	-	-	60	13.16
1978	-	-	17	3.73	19	4.17	11	2.41	11	2.41	8	1.75	8	1.75	11	2.41	-	-	-	-	85	18.64
1979	-	-	13	2.85	23	5.04	10	2.19	9	1.97	4	0.88	7	1.54	4	0.88	-	-	-	-	70	15.35
1980	4	0.88	4	0.88	33	7.24	8	1.75	1	0.22	4	0.88	1	0.22	1	0.22	-	-	-	-	56	12.28
total	4	0.88	51	11.18	107	21.46	64	14.04	61	13.38	44	9.65	30	6.58	38	8.33	26	5.70	31	6.80	456	100.00

Ministry of Interior, or the Organization of Technical Education and Vocational Training, and industrial companies, all of which pay relatively higher salaries than other employers.

Frequency and the measures of central tendency of graduates' salaries are presented in Table VI.

Research Question 3

Are graduates working within the same field of speciality in which they were trained?

The data represented in Table VII indicates that out of 166 respondents whose field of speciality was in the mechanical department, 92 (55.42 percent) were working within the same field of speciality.

In the electrical speciality field, there were 144 graduates. Seventy-six graduates (52.78 percent) were working in their field.

There were 110 respondents graduated from the field of Automotive speciality. Among those, there were 70 graduates (63.63 percent) working in their field.

In the Radio/TV speciality field, there were six graduates. Among these, five respondents (83.33 percent) were working within the same field of speciality.

Finally, in the Architecture department, there were only 13 graduates out of a total of 30 (43.33 percent) who work within their fields of speciality.

The total of graduates working within their fields of speciality were 256 (56.14 percent) of the total of the study population. Table VIII shows a total of 256 respondents who were working within their

TABLE VI
MEASURES OF TENDENCY AND SALARIES OF GRADUATES

No.	Monthly Salary in Saudi Rials	Frequencies Salaries	Measures of tendency
1	3000-3500	4	Mean = 5001- 5500 S. R. Mode = 4001- 4500 S. R. Range = 5000 + S. R. Median = 5750 S.R.
2	3501-4000	51	
3	4001-4500	107	
4	4501-5000	64	
5	5001-5500	61	
6	5501-6000	44	
7	6001-6500	30	
8	6501-7000	38	
9	7001-7500	26	
10	over 8000	31	

TABLE VII
 COMPARISON OF NUMBERS OF GRADUATES RETAINED IN
 SPECIALITY BY FIELD OF SPECIALIZATION

	Mechanical Department	Electrical Department	Automotive Department	Radio/TV Department	Architecture Department	Total
Number of graduates in each field	166	144	110	6	30	456
Number of graduates in fields of speciality	92	76	70	5	13	256
Percentage of graduates in field of speciality	55.42	52.78	63.63	83.33	43.33	56.14

fields of speciality.

The remaining respondents were asked whether their jobs were closely related or not related to their fields. Sixty-five graduates (14.25 percent) responded that their jobs were closely related to their fields of speciality. One hundred thirty-five graduates (29.60 percent) responded that their jobs were not related to their fields of speciality. The aggregate number of respondents who were not working within their fields of speciality was 200 graduates (43.86 percent).

Research Question 4

Did graduates continue their higher education after graduation from technical institutions?

The data in both Tables IX and X illustrate that 104 graduates (22.80 percent) continued their higher education. Table IX shows that 66 graduates received Higher Technical Education Diplomas from the Higher Technical Institute in Saudi Arabia, and there were 38 respondents (8.33 percent) who attended their higher education abroad and received B.S. degrees. Among those 38 respondents who attended universities abroad, 36 graduates received B.S. degrees from universities in the United States, while two respondents each received their B.S. from universities in West Germany and Italy.

When the respondents who continued their higher education were asked whether they went through academic education to secure a better qualification, only 19 (4.17 percent) responded yes. Eighty-five (18.64 percent) responded that the Technical Education Certificate qualified them to enter the Higher Technical Institute in Saudi Arabia. These results are shown in Table X.

TABLE VIII

COMPARISON OF NUMBER OF GRADUATES WHOSE JOBS ARE
EITHER RELATED OR NOT RELATED TO THEIR
FIELDS OF SPECIALITY

	Frequency	Percentage
Graduates who are working within their fields of speciality	256	56.14
Graduates whose jobs are closely related to their fields of speciality	65	14.25
Graduates whose jobs are not related to their field of speciality	135	29.60
Total	456	100.00

TABLE IX
 DISTRIBUTION OF GRADUATES WHO CONTINUED
 THEIR HIGHER EDUCATION

Year	Graduates Continued Higher Education	Degree Received		Where Degree Received		
		Higher Tech. Ed. Diploma	B.S.	Saudi Arabia	U.S.	Other
1975	30	9	21	9	21	-
1976	22	12	10	12	10	-
1977	3	3	-	3	-	-
1978	22	18	4	18	2	2
1979	21	18	3	18	3	-
1980	6	6	-	6	-	-
Total	104	66	38	66	36	2

TABLE X
COMPARISON OF AVENUES TO ADVANCED STUDY BY YEAR
OF GRADUATION

Year	Higher Education Entry with Tech. Ed. certificate		Graduates went through Academic Secondary Education		Graduates Continued Higher Education	
	N	%	N	%	N	%
1975	24	5.26	6	1.32	30	6.58
1976	20	4.38	2	0.44	22	4.82
1977	-	-	3	0.66	3	0.66
1978	17	3.73	5	1.10	22	4.82
1979	18	3.94	3	0.66	21	4.61
1980	6	1.31	-	-	6	1.32
Total	85	18.64	19	4.17	104	22.80

Research Question 5

If the graduates continued their higher education, was it the Technical Education Certificate that qualified them to be admitted to higher education institutions?

Table X shows that 85 graduates (18.64 percent) responded that the Technical Education Certificate qualified them to enter higher education.

Research Question 6

Did the graduates go through academic secondary education in order to secure a better qualification?

Table X shows that 19 respondents (4.17 percent) responded that the Technical Education Certificate did not qualify them for higher education entry and they had to go through academic secondary education to secure a better qualification.

Research Question 7

Did the graduates perceive themselves to be technically prepared and qualified to enter the work force from their speciality programs?

The data in Table XI shows that 172 respondents (37.72 percent) indicated that they were adequately prepared. There were 284 graduates (62.28 percent) who indicated that they were not adequately prepared for work force entry.

When the graduates who perceived themselves inadequately prepared were asked to state whether they felt they needed more training or more math and science courses, 157 graduates (34.43 percent) responded they

responded they felt they needed more math and science courses; 73 graduates (16.00 percent) responded they felt they needed both, more training and more math and science courses. Table XII shows the number of responses for each category by year of graduation.

Research Question 8

Do technical education graduates perceive themselves to have a significant advantage over persons with similar work responsibilities, but who are not technical education graduates?

Table XIII shows the perceptions of advantages or non-advantages of technical education graduates by year of graduation. The data further indicates that there are 294 graduates (63.82 percent) who perceived themselves to possess advantages. One hundred sixty-two graduates (35.52 percent) did not perceive themselves to possess advantages. Of those graduates who perceive themselves to possess advantages, 273 (59.87 percent) possess higher job titles and positions. Two hundred and seven graduates (45.39 percent) possess higher salaries.

When graduates were asked to state whether they were satisfied or dissatisfied with their jobs, 213 graduates (46.71 percent) stated they were not satisfied with their jobs (Table XIV). Those graduates who were not satisfied, were asked to specify whether their dissatisfaction was based on insufficient prestige related to the job titles or salary insufficiency. One hundred forty-eight (32.45 percent) were not satisfied with the jobs because of the insufficient prestige that is related to the job title. Fifty-eight graduates (12.71 percent) indicated that dissatisfaction was based on salary

TABLE XI
 PERCEPTIONS OF ADEQUACY OF TECHNICAL
 PREPARATION BY YEAR OF GRADUATION

Year	Graduates Satisfied for Work Entry				Total
	Y E S		N O		
	N	%*	N	%*	
1975	41	44.57	51	55.43	92
1976	43	46.24	50	53.76	93
1977	24	40.00	36	60.00	60
1978	17	20.00	68	80.00	85
1979	24	34.29	46	65.71	70
1980	23	41.07	33	58.93	56
Total	172	37.72**	284	62.28**	456

* percentage is based on total respondents of each year

** percentage is based on total respondents of the study

TABLE XII
 PERCEPTIONS OF STUDENTS WHO FELT THEY WERE NOT ADEQUATELY
 PREPARED FOR WORK FORCE AFTER GRADUATION

Year	More Training was needed		More Math and Science was needed		Both Math and Science and Training was needed		Total
	N	%*	N	%*	N	%*	
1975	32	43.78	2	2.17	17	18.47	51
1976	21	22.58	12	12.90	22	23.56	55
1977	20	33.33	5	8.33	11	18.33	36
1978	52	61.17	1	1.17	16	18.82	69
1979	25	35.71	14	20.00	7	10.00	46
1980	7	12.50	25	44.64	-	-	32
Total	157	34.43**	59	12.93**	73	16.00**	289

* percentage based on total of respondents of each year

** percentage based on total of respondents of the study

TABLE XIII

PERCEPTIONS OF ADVANTAGES OR NON-ADVANTAGES OF TECHNICAL
EDUCATION GRADUATES BY YEAR OF GRADUATION

Year	Possess Advantages			Advantages Possessed		
	Y E S	N O	Total	Higher job titles & positions	Salaries	Total
1975	50	42	92	45	31	76
1976	75	18	93	69	49	118
1977	36	24	60	33	22	55
1978	53	32	85	45	38	83
1979	36	34	70	37	25	62
1980	44	12	56	44	42	86
Total	294	162	456	273	207	480*

* Total exceeded 456 because of multiple selection

insufficiency.

Seven respondents (1.54 percent) indicated that dissatisfaction was based on neither insufficient prestige nor insufficient salary. According to their comments, they were dissatisfied because their jobs were not related to their field of speciality.

Research Question 9

Would technical education graduates recommend their technical programs for others with similar ambitions?

Table XV shows that 248 respondents (54.29 percent) would recommend their technical programs for others. Two hundred and eight graduates (45.61 percent) would not recommend their technical programs for others.

When the "yes" respondents were asked to explain why they would recommend their programs for others, 248 graduates explained that, because of the desperate need of technical manpower in Saudi Arabia, they would recommend their technical programs.

The two-hundred-eight respondents who indicated they would not recommend their programs for others explained that they felt disappointed with the limited knowledge and skills that technical education programs had provided them.

Table XV indicates that for the years 1975, 1976, and 1978, the number of respondents who would not recommend their technical education programs for others is larger than the numbers of the respondents who would recommend their technical programs for others with similar ambitions. A possible explanation for this might be that the number of enrollments increased by 32.00 percent in 1975 and

TABLE XIV
PERCEPTION OF JOB SATISFACTION OF GRADUATES

Year	Satisfied		Not Satisfied		Dissatisfaction is Based on			
	N	%	N	%	Insufficient Prestige		Insufficient Salary	
					N	%	N	%
1975	46	50.00	46	50.00	30	32.61	16	17.39
1976	47	50.54	46	59.46	31	33.33	15	16.13
1977	36	60.00	24	40.00	18	30.00	5	8.33
1978	32	37.64	53	62.35	37	43.52	13	15.29
1979	43	61.43	27	38.57	17	24.28	7	10.00
1980	39	69.64	17	30.36	15	26.78	2	3.57
Total	243	53.29**	213	46.71**	148	32.45**	58	12.71**

Notation: There were seven respondents who checked "not satisfied" but their dissatisfaction was based on unrelated jobs to their fields of speciality therefore, they are not included in this table.

* percentage based on total of respondents of each year

** percentage based on total of respondents of the study

by 46.00 percent in 1976. Such a growth rate may have limited the ability of administrative and instructional staff to maintain the integrity of the programs.

Table XVI shows that the majority of graduates of all speciality fields, with exception of electrical, would recommend their technical programs for others with similar ambitions. More than half of the electrical speciality fields graduates would not recommend their technical programs for others.

TABLE XV

RESPONDENTS' ATTITUDES TOWARD WHETHER TECHNICAL
EDUCATION GRADUATES WOULD OR WOULD NOT
RECOMMEND THEIR PROGRAMS FOR OTHERS
WITH SIMILAR AMBITIONS
DISTRIBUTED BY YEAR
OF GRADUATION

Year	Y E S		N O		Total
	N	%*	N	%*	
1975	45	48.90	47	51.10	92
1976	40	43.01	53	56.98	93
1977	33	55.00	27	45.0	60
1978	40	47.10	45	52.90	85
1979	41	58.60	29	41.4	70
1980	49	87.50	7	12.5	56
Total	248	54.39**	208	45.61**	456

* percentage based on total of students in each school.

** Percentage based on total of 456 students.

TABLE XVI

RESPONDENTS' ATTITUDES TOWARD WHETHER TECHNICAL EDUCATION
GRADUATES WOULD OR WOULD NOT RECOMMEND THEIR PROGRAMS
FOR OTHERS WITH SIMILAR AMBITIONS DISTRIBUTED BY
SPECIALITY FIELDS

Speciality field	Y E S		N O		Total
	N	%*	N	%*	
Mechanical	85	51.20	81	48.80	166
Electrical	67	46.53	77	53.47	144
Automotive	73	66.36	37	33.64	6
Radio/TV	4	66.67	2	33.33	6
Archeticture	19	63.33	11	36.67	30
Total	248	54.39**	208	45.61**	456

* percentage based on total of respondents in each speciality field

** percentage based on total of respondents of the study

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The major purpose of this study was to conduct a follow-up study of former students who graduated from five secondary technical institutions in Saudi Arabia from 1975 through 1980.

To meet the objectives of this study, the literature was reviewed to find any previous research that could relate to the study. A 24 item questionnaire was developed and designed to be completed by graduates with a minimum effort. The instruments were mailed to research associates in Saudi Arabia to be distributed through cooperation of employers and classmates of former graduates.

The population of this study was 456 graduates, which represents 15.4 percent of the total graduates of the technical education programs for the time period included in the study.

Findings and Conclusions

As this study comes to conclusion, it should be recognized that it is the first of its kind with respect to Saudi Arabia. It lacked the necessary background information and data from which specific hypotheses could be developed and is therefore limited as a descriptive

study. It is hoped, however, that this study will provide some of the background and data on the subjects for further research.

Based upon the data gathered in this study, it was found that:

1. The job titles of graduates were diverse, with 33 supervisors, 23 engineers, 217 technicians, 54 assistant engineers, 17 trainers, 6 clerks, 3 secretaries, 9 students continuing higher education, 3 computer key punch operators, 3 students studying flight engineering, 14 superintendents, 13 architecture draftsmen, 5 officers and 7 lieutenants in the military, 16 turbine operators, 30 teachers, and 3 department managers in the transportation company.

2. With respect to salary, it was found the mode was 4001-4500 S.R., the mean was 5001-5500 S.R., and the median was 5750 S.R.

3. Salary and time spent on the job had an interdependency, that is, the more years the graduates spent on their jobs, the higher salaries they possessed.

4. There were 256 (56.14 percent) graduates working within their field of specialities and 65 graduates working in jobs closely related to their fields of specialization.

5. One hundred thirty five (30 percent) of graduates were working in jobs not related to their field of speciality.

6. Only 104 (22.81 percent) graduates continued their higher education. Of those 104, there were 66 respondents who continued higher technical education in Saudi Arabia and 38 respondents who attended universities abroad. Thirty six respondents received B.S. degrees from the United States, one received a B.S. degree from West Germany, and recieved a degree from Italy.

7. The Technical Education Certificate qualified 85 respondents (18.64 percent) to enter Higher Technical Education in Saudi Arabia, but 19 respondents (4.17 percent) had to go through academic secondary education in order to secure a better academic qualification.

8. Technical Education Programs did not prepare the majority of graduates for work entry. Only 172 respondents (37.73 percent) were reported to be adequately prepared while there were 284 respondents (62.28 percent) were reported inadequately prepared.

9. Those 284 inadequately prepared respondents felt they needed more skill training and support courses in math and science.

10. There were 200 respondents (43.86 percent) who perceived themselves to possess advantages over the non-technical education graduates. Two hundred and seventy three respondents perceived themselves to hold job titles and positions higher than non-technical contemporaries. Two hundred and seven graduates perceived themselves to receive salaries which are higher than non-technical contemporaries.

11. Two hundred forty three graduates (53.29 percent) were satisfied with their jobs, and 213 (416 percent) were found dissatisfied with thier jobs.

12. Insufficient prestige related to the job title was the identified cause of dissatisfaction for 148 graduates (32.45 percent) while insufficinecy of salary was identified as the cause of dissatisfaction for 48 graduates. Seven respondents (1.54 percent) indicated dissatisfaction due to work being in jobs not realted to their field of speciality.

13. One hundred forty eight (32.5 percent) of graduates considred the prestige motive of an occupation more important than the

salary motive.

14. Two hundred forty eight respondents (54 percent) would recommend their technical programs for others with similar ambitions. Their recommendation was attributed to the desperate need of technical man power in Saudi Arabia. Conversely it was found that 208 respondents (45.61 percent) would not recommend their technical programs for others because they felt disappointment with the meager knowledge and skills that technical programs had offered them.

Recommendations

Based upon information obtained from this study, the following recommendations are offered:

1. The Technical Education objectives in Saudi Arabia should be well defined, published, and made known to Technical Education students and prospective students. Revisions should be added as they occur.

2. Technical Education and Vocational Training Programs in Saudi Arabia should be reviewed and revised on a continuing basis in order to keep abreast of technological changes and to keep the program curriculum and equipment up to date.

3. The General Organization of Technical Education and Vocational Training should establish a center for placement and guidance to provide graduates with assistance in order to place the technical program graduates in appropriate positions upon graduation.

4. A data bank of graduates' names and addresses should be maintained in the General Organization of Technical Education and Vocational Training Building and an effort should be made to periodically review the professional growth of the graduates.

5. Further follow-up studies of graduates and their opinions as to their appropriate and adequate preparation should be made in order to provide feed-back data for correction and further development of Technical Education programs.

6. The Technical Education institutions and curriculum should be improved and upgraded. The secondary technical institutions might be changed to college level. This would enhance the programs, inspire Saudi youth, and increase demand for programs in technical education.

7. There is need for a campaign that can aid in diminishing unfavorable attitudes toward manual work. The mass media could play an important role in promoting the dignity of work with tools and machines. Financial inducements might be used to attract more students to technical education.

8. A public relations campaign could be initiated to imbue the public with a better comprehension of the important role of technical education. Of specific concern, this campaign should address prevalent the current negative attitudes and lack of prestige associated with technical education and related work.

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APPENDIX A

QUESTIONNAIRE

1. When did you graduate from the technical school? _____ 19__
2. From what school did you graduate? _____
(write official name)
3. What was your major speciality? _____
4. Did you continue your higher education after the technical school? Yes ____ No ____

If the answer is YES, answer questions #5 through #8.
If the answer is NO, proceed to question #9.
5. What is the latest degree you now hold? _____
6. From where did you receive your latest degree? _____

7. Did the Technical Education Certificate qualify you to apply to higher education? Yes ____ No ____
8. If the answer to question #7 is No, did you go through the Academic Secondary Education in order to achieve better academic qualification? Yes ____ No ____
9. At the time of graduation from technical school, did you feel you were adequately prepared and ready to enter the workforce with full confidence? Yes ____ No ____
10. If the answer to question #9 is No, what of the following do you think you needed the most?
 - a. More math and science _____
 - b. More training _____
 - c. Both a and b _____
11. Where do you work now? _____
12. How long have you been working in your latest job? ____ years

13. What is your job title: Supervisor Engineer
 Technician Trainer
 Assistant Engineer
 Other (specify)
14. Do you work within the field of speciality in which you were trained in school? Yes No
15. My current job is closely related to my field of speciality in which I was trained. Yes No
16. My current job has no relation to the field in which I was trained. Yes No
17. Please check one of the following items.
- a. Technical Education graduate possess some advantages over the non-technical education graduates.
 If checked, proceed to question #18.
- b. Technical Education graduates do not possess any advantage over the non-technical education graduates.
 If checked, proceed to Question #20.
18. Technical Education graduates possess the following advantages over the non-technical graduates.
- a. Higher job titles and positions
 b. Higher salaries
19. Does your job involve working with machinery? Yes No
 If yes, please specify what kind of machinery you work with

20. What is your present monthly salary? (check one)
- a. \$3,000 - \$3,500 SR f. \$5,501 - \$6,000 SR
 b. \$3,501 - \$4,000 SR g. \$6,001 - \$6,500 SR
 c. \$4,001 - \$4,500 SR h. \$6,501 - \$7,000 SR
 d. \$4,501 - \$5,000 SR i. \$7,001 - \$7,500 SR
 e. \$5,001 - \$5,500 SR j. Over \$8,000 SR

SR in Saudi Rials which is equal to 0.30 dollars.

21. Are you satisfied with your job? Yes _____ No _____

If the answer is No, answer questions #22 and 23.
If the answer is Yes, skip to #24.

22. Is your dissatisfaction based on insufficient prestige that is related to the job title? Yes _____ No _____

23. Is your dissatisfaction based on insufficiency of the job's salary? Yes _____ No _____

24. As a graduate from the Technical Education Institution would you recommend the programs for others with similar ambitions? Yes _____ No _____

Please explain why _____

Write any comments you wish with regard to this study.

APPENDIX B

TRANSMITTAL LETTER

Dear friend:

I am attempting to conduct a follow-up study of technical school graduates in Saudi Arabia to find out what has become of former student and just what their feelings are towards the training they received at the technical schools.

Enclosed is a questionnaire which I am asking you to complete, as soon as possible and return to me in the enclosed, return addressed, stamped envelope. Please fill the questionnaire out as completely as you can. Your answers will be held strictly confidential.

The information you provide will be utilized to help improve the technical programs and also to help meet the needs of future students attending the technical schools. This can not be done without your help.

YOUR COOPERATION IN FILLING OUT THIS QUESTIONNAIRE WILL BE SINCERELY APPRECIATED.

Sincerely yours,

Abdullah A. Al-Azzaz

P.O. Box 705

Stillwater, Ok 74074

VITA

Abdullah Abdullrahman Al-Azzaz

Candidate for the Degree of

Master of Science

Thesis: A FOLLOW-UP STUDY OF GRADUATES OF FIVE SECONDARY TECHNICAL SCHOOLS AND INSTITUTES IN SAUDI ARABIA

Major Field: Technical Education

Biographical:

Personal Data: Born in Janobiah Sodair, Kingdom of Saudi Arabia, August 15, 1950, the son of Mr. Abdullrahman Al-Azzaz and Mrs Monerah Al-Sehail.

Education: Graduated from Royal Technical Institute (high school), Riyadh, Saudi Arabia, in 1971; Received the Bachelor of Science in Mechanical Engineering Technology degree from University of Southern Colorado, Pueblo, Colorado, in 1981; completed requirements for the Master of Science degree in Technical Education at Oklahoma State University, Stillwater, Oklahoma in December, 1982.

Experience: Mechanical Power Technician at Riyadh radio power station, Ministry of Information, Saudi Arabia, 1971-1978.