

AN ABSTRACT OF THE THESIS OF

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Title: An Investigation of Educational Television in Saudi Arabia

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Frank Cross

The purpose of this study was the investigation of attitudes toward educational TV in Saudi Arabia. The sample population for the study was 444 male students, teachers, and administrators randomly selected from three educational districts (Mecca, Al-Madinah, and Jeddah). The data collected were examined to determine attitudes toward three educational series on Saudi Arabian television:

- 1) To Whom the Cup
- 2) Our Students in the Field
- 3) The Guide to Success

A two-part questionnaire was developed and administered to the respondents. Part I was composed of reaction, opinion, comparison, and continuing questions. Part II consisted of a twenty-five item scale to measure attitudes toward educational TV.

Results and conclusions. The two-ways ANOVA was used to determine the acceptance or rejection of the null hypotheses, based on the .05 level of significance. One of seven null hypotheses was rejected. A significant difference was found in attitudes toward educational TV between students from the three districts. One reason postulated for this difference was that Mecca and Al-Madinah are the Holy Cities of Islam, and people in the two cities tend to be more conservative and devoted to maintaining traditional Islamic values and customs. On the other hand, Jeddah is a commercially oriented city which has been subjected to a variety of western influences.

All of the other null hypotheses were accepted: That there was no significant difference in attitudes toward educational TV between students in the fields of science and the humanities and between teachers and administrators in the two fields and in the three districts.

Findings determined from Part I of the questionnaire indicated that a significant part of the school population of Saudi Arabia favors additional and new educational television programming. There were significant criticisms of the quality and of the viewing times of current programming, a problem which could in part be alleviated by the institution of a new television channel dedicated to educational programming. Finally, students in particular wanted educational programming that was more closely related to the curriculum of their educational institutions.

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by

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AN INVESTIGATION OF EDUCATIONAL
TELEVISION IN SAUDI ARABIA

CHAPTER I. INTRODUCTION

Saudi Arabia is a large Middle Eastern nation which ranks high in worldwide importance. Saudi Arabia lies in the Arabian peninsula at the southwestern corner of Asia. The Kingdom of Saudi Arabia is bordered on the north by Jordan, Iraq, and Kuwait. The two Yemeni republics and Oman lie to the south. The Arabian Gulf lies to the east and the Red Sea to the west. The Kingdom of Saudi Arabia encompasses about one million square miles with a population of about eight million. All of the people speak Arabic and their religion is Islam.

Education in Saudi Arabia is totally controlled by the government. While Islamic law requires considerable opportunity for public input to the decision-making processes of government, the government is not subject to the same kind of public scrutiny in the area of education as is present in American schools. Education is financed by the Saudi Arabian government and is free to all students. These monies come from oil revenues and not from taxes of any kind. As a result education is centrally financed and controlled at the governmental level.

The government of Saudi Arabia, like that of many other countries which are trying to modernize in the shortest possible time, has elected to operate within the framework of set goals which are to be achieved in set periods of time. In practice this takes the form of a series of five-year plans (Kingdom of Saudi Arabia [KSA], Ministry of Planning, United States--Saudi Arabian Joint Commission on Economic Cooperation [USSAJC], 1985). All future plans for education in Saudi Arabia must fit within this framework. In the past as well as the present, Saudi Arabian education has not been compulsory. The aim in the past was to simply increase the number of educated Saudis in the various job positions which to date have been dominated by foreign people. At present, a large proportion of high level employees in Saudi Arabia are by necessity of non-Saudi background. In addition, an effort is needed to create a better balance in career distribution among educated Saudis. It is certain that education is going to be of great importance to the future of Saudi society. In the interest of providing information to the formulators of any future five-year plans, it is necessary to more thoroughly study all aspects of Saudi education.

There are several government sponsored agencies in Saudi Arabia which have published information on the statistical relationships in education in Arabia. However, when English language sources at an American university are examined, it is clear that virtually nothing independent has

been published about the internal structure of Saudi education or how to quantify it. Certainly it has only been in this decade that any students from Arabia have studied in the United States. The only sources are a few published doctoral theses completed within the last few years. None of these focus on the particular problems discussed here.

One of the most interesting of the doctoral theses is that of Abdulatif Hussien Faraj, Saudi Arabian Educator's Perceptions of Educational Goals for Secondary Schools, which was completed in 1981. He states:

Within the Saudi historical framework educational literature is scarce. Therefore, Islamic educational goals must be considered in terms of the philosophical basis of Islamic education and the belief system of Islam as it reflects on the universe, man, and knowledge. (Faraj, 1981)

In another place he states:

Students generally do not study basic courses such as economics and vocational courses necessary for practical survival because the curriculum is limited to the two divisions (science or arts). The result is deficiencies in basic skills which limit student flexibility and handicap them in entering some colleges. Therefore, it can be concluded that the curriculum is irrelevant for many students to the structure and pace of Saudi economic and social development and expectations of individuals. (Faraj, 1981)

It is an unfortunate fact that there has been very little research published in any language on the subject of Saudi education. Nawal Hamed Yaseen writes in her thesis published in 1981:

Research in the United States about Saudi Arabia indicated a scarcity of educational research. In addition, these studies indicated a definite need for further research related to all aspects of Saudi education. (Yaseen, 1981)

There are probably many reasons for this lack of research on education in Saudi Arabia. Two primary reasons seem to be obvious. The first lies in the short history of western contact with Saudi education in general. While much effort has been made to increase the educational level in Arabia, most of the employees in the educational system are preoccupied with the actual teaching process itself. Secondly, when research has been performed it is directed at information that the government wishes to make public about its own operations. However, it should be added that there is considerable information available through this channel.

It should be evident at this point that much work is going to be necessary before a clear picture of Saudi education can emerge and that most of this work is going to be new. Exploratory studies, such as the one undertaken here, will have to be conducted to outline the relevant focus on future research. Much of the initial research should remain general until trends may be identified. In this way specific topics for further research may be identified.

The types of education in Saudi Arabia are quite varied in order to better fit the needs of the diverse population. Special programs are offered in literacy, technology, and religion, but this paper will focus on children's general education and future college possibilities. General education in Saudi Arabia up to the college level is available to all persons regardless of age, but of course it is primarily

directed at the children. It is divided into the following stages:

Table 1. Number of Students, 1979-80

<u>Educational Stage</u>	<u>Number</u>
Elementary	862,260
Intermediate	245,194
Secondary	<u>93,584</u>
TOTAL:	1,201,038

 Source: KSA, Ministry of Education,
 Center for Statistical Data and Edu-
 cational Documentation, 1979-80.

The Elementary stage begins at the age of six and continues until the approximate twelve years of age. Elementary education is divided into six grades through which the student is promoted by examination. The largest areas of the curriculum are devoted to mathematics and the literary arts. Fifty percent or more of the student's time will be used for classes in the Qur'an, fiqh (law), the Hadeeth (traditions of the Prophet Muhammad), and the Arabic language. Students at this level may study the art of non-human subjects only. Some kinds of singing without music may be taught in private schools. Sports are required. Adults may also attend this stage and it is available at night. All students may sit for exams without attending classes.

The Intermediate stage is three years in duration and is divided into three grades. Promotion, as in the elemen-

tary stage, is through examination. This stage is available during evenings as well as days and is also open to adults. Recently the Ministry of Education has attempted to introduce "vocational" and "practical" programs at the intermediate stage.

Study in the Secondary stage (high school) lasts three years and is divided into three grades. The first grade is general in nature, but then the program separates into the two branches of the "sciences" and the "humanities" mentioned above. The nature of this branching period in the students' lives is the focus of this study. These schools tend to operate during the day.

The Summary of Saudi Arabian Five Year Development Plan, 1980-1985 (KSA-USSAJC, 1985) reports that new school construction during that period will as indicated in Table 2.

Table 2. School Construction, 1980-85

<u>Type of School</u>	<u>Classrooms</u>	<u>Schools</u>
Primary	10,461	848
Intermediate	4,161	270
Secondary	1,593	105
Intermediate/Colleges	-	6
Special Education	-	5
Qur'anic Schools	-	60
Polytechnic Institute	-	1

 Source, KSA, Ministry of Education, Center for Statistical Data and Educational Documentation, 1979-80.

Projected enrollments are indicated in Table 3.

Table 3. Projected Enrollment, 1980-85

<u>Category</u>	<u>1979/1980</u>	<u>1984/1985</u>	<u>Percent Increase</u>
Elementary	527,769	696,335	31.9
Intermediate	126,215	188,844	49.0
Secondary	50,489	79,625	57.7
Teacher Training	9,594	17,335	80.7
Adult Education	75,700	137,650	81.8
Other	8,624	1,275	1.0

Notes: 1) Data includes Islamic education.

2) "Other" includes special education and technical education.

Source: KSA, Ministry of Education, Center for Statistical Data and Educational Documentation, 1979-80.

These figures contrast with those cited by Faraj (1981). He stated that in 1976 Elementary boys totaled 439,839; Intermediate boys totaled 104,979; and Secondary boys numbered 32,944. The growth in the last decade has been incredible. In 1966 the total number of boys in Secondary schools was only 6,949.

Educational Television

Educational television programs started officially in 1974 with the program The Elimination of Illiteracy and other educational presentations, culminating in the Saudi production Between Two Generations (1978). At present educational programs on television, with the occasional addition of films from the British Ministry of Education, are

Our Students in the Field, and
Open O! Sesame! for children.

The duration of the programs on television depends on the kinds. For instance, educational competition programs and the ones destined to interest a large population are no more than 60 broadcasting minutes long (45-60 minutes). There is educational competition in the program Our Students in the Field. The competition is limited to students and supervision, including grading and coaching, is provided by teachers.

Coordination takes place between all governmental agencies and the television stations. For instance, there is coordination between the television broadcasting agency and the Ministry of Education in programs like Our Students in the Field, The Elimination of Illiteracy, and Modern Mathematics. There is coordination between television broadcasting agencies and the Ministry of the Interior in programs like The Sleepless Eyes or Health (general health, mental health).

The role of television in educational broadcasting programs is to prepare the required clarifications and explanations when educational agencies have missed them. The idea of continuity is indeed alive, for there is encouragement from viewers to create new series or at least to bring back the old programs if no great change has occurred in the school programs.

Educational Programs Available Through Saudi Television

1) The program The Guide to Success (time: 60 minutes, weekly). The program was shown as a series on TV starting in 1976 during a complete term of three months. The program continued during the session of Rabi' Al Awwal of the year 1977 and during the session of the year 1979. The show was suspended after this last session until now.

The program was educational and aimed at overcoming the difficulties confronting the medium level student in mathematics and Arabic language and in the subjects of physics and chemistry for the students of high schools. The teachers were very conscientious in preparing beneficial resumés appropriate to the duration of the program. The program met with great success, for students eagerly awaited its next sessions.

2) The program To Whom the Cup? (time: 60 minutes, weekly). The program was shown as a series on TV in the sessions of Muharram for a period of three months during the years 1981, 1982, and 1983. The program has since ended.

Considering that the program was competitive, it was reserved for the schools, especially the high schools. Two schools competed in each session and the winners played against one another. All of the schools were involved. The winner got a prize, which consisted of a cup, money, and many material items.

The program questions were based on material drawn from the curricula prescribed for the same school levels. The

purpose of the program was to cause students to review their curriculum, preparing for the program as if it were an examination. Through this program, the student knew the extension of his effort and his understanding of his courses, with the addition of discovering areas of weakness in the material of his studies. The program offered opportunity for revision and success. In addition, the student following the program in his home was given a kind of intellectual exam, i.e. to follow the program was to engage in a kind of homework.

3) The program Our Students in the Field (time: 60 minutes, weekly). The program has been shown as a series on TV during the last several years, 1982-1985, and is still on the air.

The program is a small version of the program To Whom the Cup?. The program allows the students in the primary and secondary schools to compete with students in the high schools, so every school selects students compete with those from other schools. The questions are from the topics they study. There is a prize given to the winner. Its other goals do not go beyond the ones mentioned for the program To Whom the Cup?.

4) The program Modern Mathematics (time: 30 minutes, daily). The program was shown daily, beginning during the session of Muharram 1981, until the closing of the school session, and during 1982 and 1983 the program was shown daily without missing a session.

It was realized by the orientation advisors, during the teaching of mathematics like calculus, geometry, and mechanics, and the reform of modern science concerning modern mathematics, that the topics were very difficult for the student to understand and quickly accept. The result was that many students were incapable, either in secondary schools or in high school, of succeeding in monthly or term exams. For this reason television, with the collaboration of the Ministry of Education, participated in giving the students some courses at home through TV broadcasting. The presentations were over by the call of the Evening Prayer each day. The courses were given by one of the professors of modern mathematics, either at the primary, secondary, or high school levels, from the beginning of the study course until the end of the term.

The program succeeded, where teachers had before failed, in inculcating students in modern mathematics, familiarizing them with it so that it became like any other school subject. Students now pass modern mathematics exams like any other exam, without fear or alarm.

5) The program Our Children Abroad (time: 60 minutes). This is shown weekly in the Holy Month of Ramadan and during the Holy Days of Breaking the Fast. The program was shown as a series during the years 1981 and 1982 during the sessions of Muharram and Rabi', in addition to showing some parts of it during the years 1982 and 1983. The goals of the program are to acquaint the family, relatives, and

country of the student abroad with his soul, if not his body. Through showing the student in his classroom or laboratory on TV, the studies of the students become known, along with the stages of study he went through to obtain a diploma.

6) The program The Elimination of Illiteracy (time: 30 minutes, weekly). This program is considered to be the key to educational television programs. It has been shown since 1974 and as its name indicates, the program's goals are to teach citizens to read and write through television by using the techniques of illustration, explanation, and pictures.

It is generally assumed by educators that television has a place in education. Researchers have attempted to measure the advantages realized through educational television programs in terms of both efficiency of curriculum presentation and increased student involvement. Some researchers have documented an increase in the efficiency of education through television. Others have cited an educational advantage for educational television through more direct student involvement (Gattegno, 1971, p. 73).

This study is more concerned with measuring student involvement in the educational television process through attitudes than in quantifying increases in technical efficiency. Saudi Arabia pays great attention to education. Generous funds are allotted, and every possible effort is made to educate all the citizens. In this context the Saudi Arabian government has opened schools in the appropriate

level of study for males and for females. All these schools take care of the student from an early age until he obtains the general secondary education certificate, which entitles him to admission into a university to obtain undergraduate and post-graduate degrees in many fields.

The Problem

Saudi Arabia tries to achieve a higher degree of modern education by correlating the efforts of the Ministry of Information and the Ministry of Education. This has resulted in the steady modernization of educational television.

Learning by TV is one of the important facets of modern Saudi Arabian life. The great progress achieved in the use of educational television by modern countries has helped to invigorate the educational system in other countries and has led them to invest in the idea of students learning through educational TV.

Saudi Arabia has spent a great deal of money on its educational systems, leading to consideration of the following questions:

- 1) Does the student agree with the concept of education by television;
- 2) Are there positive reactions to educational television in Saudi Arabia, or are there any objections;
- 3) Does Saudi Arabia have enough educational television programs;

- 4) Does educational television help students to better understand subjects and become more knowledgeable;
- 5) What do students, teachers, and administrators say about educational television in Saudi Arabia;
- 6) Do students need a special channel to present educational television programs?

These questions lead to the need to measure attitudes and the differences in attitudes between students toward educational television programs according to their specialization (humanities or science), and also to determine what differences there might be between districts (Mecca, Al-Madinah, and Jeddah). Also, the same measurements should be made for teachers and administrators.

In order to determine these attitudes a reliable and valid instrument was developed, one which used a Likert-type scale to measure the attitudes of male, secondary school students, teachers, and administrators toward educational television in Saudi Arabia.

Hypothesis

This study will test the following null hypotheses:

- H_1 : There is no significant difference in the attitude toward educational television between male, secondary school students in three districts of Saudi Arabia (Mecca, Al-Madinah, and Jeddah).
- H_2 : There is no significant difference in attitude toward educational television between male, secondary

school students in the two fields of science and humanities .

H₃: There is no significant difference in attitude toward educational television between secondary school teachers in the three districts of Mecca, Al-Madinah, and Jeddah.

H₄: There is no significant difference in attitude toward educational television between secondary school teachers in the two fields of science and humanities.

H₅: There is no significant difference in attitude toward educational television between secondary school administrators in the three districts of Mecca, Al-Madinah, and Jeddah.

H₆: There is no significant difference in attitude toward educational television between secondary school administrators in the two fields of science and humanities.

H₇: There is no significant difference in attitude toward educational television between secondary school teachers and administrators (staff).

Definition of Terms

ANOVA. Analysis of variance.

ETV. Educational television.

ETC. Educational telecommunications.

ITC. Instructional telecommunications.

ITV. Instructional television.

LSD. Least significant difference test.

Likert Scale. A scale for measuring attitude based on the research of Rensis Likert. The scale items generally have a five point range:

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree.

NET. National educational TV.

SANCST. Saudi Arabian National Center for Science and Technology.

PTV. Public TV.

Design of the Study

The study is divided into two stages (for a detailed explanation, see Chapter III, Scale Methodology and Item Selection):

1. First Stage. The first stage was to construct the attitude scale according to statistical principles, and to distribute 150 statements randomly to 200 students from King Abdulaziz University, using the Likert scaling procedure method. Every effort was made in determining the content of the attitude scale to reflect the criteria proposed by Edwards (1957, pp. 13-14) for establishing a scale which

will accurately measure attitudes in a fair and unbiased manner.

2. Second Stage. The second stage was to investigate differences in attitudes between students, teachers, and administrators in the three districts. This was done by selecting a random sample from each district and applying the scale developed to these samples and then analyzing the result.

Among the questions some deal with feelings toward educational television programs, the times they are presented, the importance of educational TV, and the relation and coordination between educational television and the students, teachers, and administrators. Statistical analyses of answers to these was done to try to see relationships between the verbal and the attitude results.

Limitations of the Study

The Rensis Likert scaling procedure forces the investigator to assume that the data collected on an attitude scale can be dealt with as Equidistant Interval data, which can then be processed by the analysis of variance (ANOVA) technique.

In regard to the present study, it was the first study to investigate attitudes toward educational television in Saudi Arabia. There is thus a limitation in knowing the advantages and disadvantages of using this scale. Also, there are no available statistics concerning the numbers of

students in each district at this time. Even so, the sample was selected to help make statistical analysis easier.

Differences were studied according to the students' final degree. Such differences as nationality (many students were not Saudi Arabian), income, whether or not the student owned a TV, and how much it was watched, were not examined and this may affect the results.

The sampling of students, teachers, and administrators was selected by a fixed number in each district, which helped with statistical analysis and was necessary because there were no statistics available with the required information.

Need for the Study

Television has been used as an educational medium in many developing and industrialized countries. TV, more than any other mass educational media, has invaded the teacher-learning process, forcing both teachers and students to become responsible for the transfer of learning content.

Lawrence E. Fraley and Earnest A. Vargas, educational psychologists of West Virginia University, identify the contribution of mass educational media to the teaching-learning process:

With the national commitment to mass education and increasing demand that it be met with higher standards, there is an increasing concern with how to produce new behavior in learners rather than simply "teaching at them" in hope that desirable effects may result.

Investigating the history of educational TV in Saudi Arabia revealed that it was established in 1965. Since then many educational programs have been presented, but until now no research has been developed to evaluate educational television in Saudi Arabia and how it has affected the people.

This lack of current research limits the scope of analysis and recommendations of this study. The recent initiation of educational TV in some higher educational institutions in the Kingdom has not produced sufficient data concerning the adaptability of the medium to education.

In this study specific Saudi Arabian educational programs and perceptions of how they have affected students, teachers, and administrators were investigated. The Likert scale procedure was used as a measurement, which should help those who want to use the procedure in the future.

CHAPTER II

SURVEY OF LITERATURE

The literature surveyed in this chapter is divided into three major areas:

- I. Educational institutions and television in the Kingdom of Saudi Arabia.
 - A. The history of the educational system in Saudi Arabia.
 - B. The modern educational system.
 - C. TV in the Kingdom of Saudi Arabia.
- II. The history of educational television.
- III. The history of attitudes to educational TV.

I. Educational Institutions and Television in the Kingdom of Saudi Arabia

Formation of the Kingdom of Saudi Arabia

Saudi Arabia was founded by King Abdulaziz Ibn Saud, whose family was forced to flee their capital, Riyadh, in his early childhood. Ibn Saud began his rise to power in 1901 when he left Kuwait and returned to Riyadh with a few followers and captured the capital's fortress. During the next decade he won support and his rule spread. In the 1920's he extended his kingdom from coast to coast. His troops moved against King Hussein in Hejaz in 1924 and took Mecca, and a year later Al-Madinah and Jeddah. In 1926 he was proclaimed king of Hejaz and Nejd, and Asir petitioned to be admitted as a dependency; in 1932 the kingdom became Saudi Arabia.

Religious zeal was a factor in the king's success in unifying the Bedouin tribes. His loyalty to the Allies in World War II helped keep the Arab world stable. He died in 1953 and his eldest son ascended the throne as King Saud.

Slowly at first, riches from the earth were used to bring schools, hospitals, water and sanitation systems to the towns. Oil wealth began to pay for irrigation canals and building roads, railways, wells, and airports on the desert (Compton's Pictured Encyclopedia, pp. 320, 327).

Education: Historical Background

By 1924, when a system of "modern" education was created, there were five institutions in the Kingdom of Saudi Arabia which offered formal education (the Saulatiyya School, Al-Fakhriyya School, Islamic School (Daar Al-Faa'izeen), Al-Falah School (Jeddah), and Al-Falah School (Mecca). These were philanthropic schools operating with private donations by early immigrants.

The Saulatiyya School is typical of the formal educational system. It was founded in 1872 by Mrs. Saulat Al-Nissa' of India. Students entered at age 6 and graduated after 14 years at age 20, progressing through 3 four-year levels and 1 two-year level. The school featured a balanced theoretical program as an extension of the Islamic educational system whereby students were taught according to individual ability. The school offered free education to needy students in a separate section. Upon entry to the school students' ability was evaluated immediately by verbal and written examinations. Teaching methods emphasized memorization and required students to "cram" in order to succeed.

The General Department of Education was founded in 1925 as the first systemized organization for education in the Kingdom. The first educational facility for post-elementary studies was founded in Mecca in 1926 to train teachers and civil service workers during an intensive, diverse five-year

program (Saudi Scientific Institute). A judicial section was added in 1933 that was a forerunner of the Shari'a (Religious Law) colleges established 17 years later. Successful graduates were given scholarships to Cairo theoretical colleges.

The External Missions Preparation School which opened in 1936 began educational specialization in the arts and sciences and it was the foundation upon which the present educational system was constructed. It now operates as the King Abdulaziz (Al-Aziziyya) Secondary School of Mecca.

The Taif School of Islamic Fundamentals (Theology) was planned by the General Department of Education and opened in 1945 as the first stage for preparing students to continue and complete higher education for the first time inside the Kingdom, with primary emphasis on specialization in Islam. Its aims, programs, flexibility, and serious scientific atmosphere were unique in the Kingdom. The school sponsored intramural sports activities and student-organized educational field trips. Final exams were given to students organized in groups according to study level. Near the end of the school year students took leave to prepare for finals week. Those who failed them repeated them at the beginning of the following school year, which determined whether they would be promoted. Students received monthly stipends and

were given free transportation to and from school. The success of The Taif School's experiment in creative education was reflected by graduation of leaders in society and its survival to the present day. Now it operates as other schools in 2 three-year stages (intermediate and secondary).

Taif's instructors were educated by the old educational system at Cairo Al-Azhar University. Their close association at the school's Al-Mahja boarding house resulted in formation of "The Club," where scholastic contests and activities related to school studies provided practical experience at weekly meetings. Teachers lent advice and guidance and participated in activities, but The Club's management remained strictly with the students. Graduates of the The Club often became distinguished in a variety of professions, and The Club eventually established community ties (Al-Zaid, 1982).

The success and fame of Dar Al-Tawhid (Taif) had substantial effects on establishing other institutes with the same purpose, i.e., teaching and disseminating Islamic science. The first opened in Riyadh in 1950. By the end of 1957 the Kingdom and some Gulf Emirates had 37 such institutes.

Initially these institutes consisted of a two-year primary and a four-year secondary stage (1937-1957), which was eventually adjusted to a five-year program. In 1962 the primary stage was canceled, and in 1971 the institutes' programs were altered to the new system of education with three

intermediate and three secondary classes. When they started the institutes focused on study of religion and the Arabic language. Riyadh Educational Institute had a club similar to that of Taif. Rather recently curricula has been expanded to include "solid" subjects.

In 1952 the Ministry of Education was established to replace the General Department of Education. It has enjoyed good quantitative progress in supervision of public, special, and technical schools, elementary teacher training, cultural affairs, program planning, and other administrative areas.

The Kingdom's first university, Riyadh, was established with 13 faculties in 1957, followed in 1960 by the Islamic University of Al-Madinah.

The counterpart of the Ministry of Education, the Presidency of Girls' Education, was established in 1970. Until 1970 girls' education was limited and conducted by only a few private institutions in the Kingdom. Education of girls was strongly opposed in some areas until the Presidency began functioning; presently, girls' education is keenly supported and the number of female students has risen dramatically (Al-Zaid, 1982).

The University of Petroleum and Minerals was established in Dhahran, Eastern Province, in 1964 to specialize in science and engineering. It is characterized by well-integrated educational and teacher/student building facili-

ties. Contrary to all other higher educational instruction, subjects are taught in foreign languages.

King Abdulaziz University began in 1971 when Jeddah National University (1967), Shari'a College, and Mecca College of Education (Ommo-l-Qura University) merged for a combined total of 14 faculties. Imam Mohamed bin Saud Islamic University (1974) was an integration of colleges of the Organization of Educational Institutes and now consists of 7 faculties based in Riyadh.

The newest university is King Faisal University in Dammam, eastern Saudi Arabia, founded in 1975 with five faculties. Other institutions of higher education include girls' colleges of education, junior teacher preparation colleges, centers and institutes of the Ministry of Education and other ministries, government departments, and institutions (e.g., military academies and training centers) (Al-Zaid, 1982, pp. 15-34).

Educational structure. The first modern schools in Saudi Arabia were established in its largest cities--Mecca, Al-Madinah, Riyadh, and Jeddah. Small groups of children in small towns and villages were educated in kuttabs (elementary schools). In remote areas schools were non-existent and children had little opportunity for formal education.

From the beginning of formal education to the present males have been segregated from females and are educated at separate schools. Students progress through four levels of education: kindergarten (rawda)--1 year; elementary

(ibtidai)--6 years; intermediate (mutawassit)--3 years; and secondary (thanawi)--3 years. Kindergarten facilities are underdeveloped in metropolitan areas and are not yet found in rural districts, so many children enter elementary school at age 6.

At the primary level children study religion, Arabic language, general science, social science and home economics. At the end of this six-year elementary level students must pass the Public Secondary Examination to proceed to the intermediate level (Al-Zaid, 1982).

During the three-year intermediate level students are taught religion, Arabic, general science, social science, home economics, and English. When they pass annual exams they are promoted to the next grade level. The Public Intermediate Examination is given at the end of the third year (9th grade) for promotion to the secondary level.

Students entering the secondary level at the 10th grade study religion, Arabic, science, home economics, and social science. In the 11th grade students enter a literary (adabi) major or scientific (ilmi) major. Students successfully passing the science and math portions at the end of the 9th grade with a 55 percent combined score are allowed to select a scientific major. The Public Secondary Examination conducted at the end of the 12th grade (third year) qualifies students for colleges and universities (Al-Zaid, 1982).

Philosophy of education. The desires, principles and values of a nation are implemented through education. Saudi Arabia was founded on a definite sociopolitical philosophy arising from the Fundamental of Islam, and educational policy was developed with the intent of applying this philosophy. The Official Decree of Educational Policy issued in 1968 defined the path of all stages of education, reflecting their basis in an overall Islamic perception of the universe, man, and life. The Decree confirms that Islamic studies are basic at all levels of education and that Islamic culture is a basic subject in all higher educational years. All educational instruction and materials are channeled toward Muslim thinking. Harmony of Islam with science and technology is among the most important means for cultural, social, economic, and health development. It aims at exchange with international cultural development in all fields, directing them to facilitate society's and mankind's welfare and progress (Al-Zaid, 1982, pp. 35, 39-40).

The Modern Educational System

The role of the katatib (writing school) and halaghat (traditional Islamic seminar teaching style) began to change when the country was united into a kingdom. Now education in the Kingdom is free, but not mandatory for all school-aged people. Many schools are opened at different educational levels every year. (The educational growth statistics referred to in this section are provided in greater de-

tail in Appendix A.) Several centers provide adult education, and special-education schools provide for the needs of handicapped students. Liberal financial assistance and grants are provided by the government in an attempt to eradicate illiteracy as quickly as possible. Government allotments to each student include textbooks and health services. Some intermediate, secondary, and vocational institution students are given stipends to cover living expenses. Students attending universities outside their home towns are provided with living accommodations and many students studying in foreign countries are sponsored by government agencies (Khalid, 1985, pp. 46-47).

Elementary Education. Elementary pupils had the highest reported increase in enrollment of all students during 1980-1981 (76.6 percent--930,436 pupils), i.e. 61 percent of the total number of students at all levels of education. The number of elementary teachers rose 8.5 percent. A total of 370 new elementary schools increased the total number to 5,744 (70 percent of the total number of schools). The number of intermediate and secondary students rose 4.9 percent, and the number of teachers rose 3.2 percent, to 43,866. Approximately 241 new intermediate and secondary schools opened, bringing their total number to 2,181.

The number of adult males registered fell, but that of female adult students increased notably. The ratio of female students to total enrollment in adult literacy schools rose from 27.4 percent in 1979-1980 to 37.9 percent in 1980-

1981, when the total number of males was 90,708 and that of females was 55,484.

Technical Education. Technical education in the industrial field is taught at five vocational secondary schools established in Al-Madinah, Taif, Abha, Aneyza, and Hofuf, in addition to four industrial technical institutes (Royal Technical Institute--Riyadh, Model Industrial Institute--Jeddah, Industrial Institute--Dammam, Higher Technical Institute--Riyadh). Students are prepared at these institutes to enter professions in such fields as auto mechanics and electricity, electrical engineering, radio and television engineering, and general engineering. In 1980-1981 6,533 students were enrolled at vocational secondary schools and 387 at higher technical institutes.

For the purpose of education in commerce, 8 secondary schools of commerce (4 in the Western Province, 3 in the Eastern Province, 1 in Riyadh) offer programs to students who have completed preparatory education. Two higher institutes of finance and commerce at Riyadh and Jeddah offer training in administration and accounting to intermediate level employees. Total enrollment during 1980-1981 was 4,593 at secondary schools and 487 at the two higher institutes. A model agricultural institute has been established at Buraydah, with a total of 246 students enrolled in 1980-1981. The total number of students at technical education courses was 7,969 in 29 schools during the 1981-1982 school year (Al-Zaid, 1982).

Vocational Training. There were 18 vocational training centers in the Kingdom in 1980, with 3,684 trainees; graduates increased 16 percent over the totals for 1979. Six vocational centers trained 9,422 students in 18 free day and evening programs during the 1980 school year. In addition, there are On-Job-Training programs and an instructor training program at the Riyadh Instructor's Training Institute (Al-Zaid, 1982).

Higher Education. The Third Five-Year Plan allocates 23 billion SR (Saudi riyals) to construction of new university campuses, expansion of existing structures, erection of colleges and junior colleges, and student-teacher housing. In 1980-1981 the number of registered students increased 13.4 percent over the previous year to 54,397; teachers increased by 24.2 percent to 5,946, resulting in a student-teacher ratio of 9:1. Graduates during the 1980-1981 academic year totaled 5,448. The number of female students increased 25.8 percent to 15,932; women teachers increased 25.2 percent to 1,283. Three new women's colleges were recently opened in Al-Madinah, Buraydah, and Abha, bringing the total to 9 in the Kingdom. There is also a High Institute of Social Services (Riyadh) and special women's departments at some universities. There were 10,610 females attending schools of higher education and university departments during 1980-1981.

The Third Five-Year Development Plan for Education.

The Third Five-Year Development Plan for Education, devel-

oped by the government of the Kingdom of Saudi Arabia, is coordinated and administered by 16 interrelated agencies in 3 functional components: general and higher education; vocational, government and other institutional training; and in the public sector, labor affairs. The chief emphasis of policies adopted by the plan focus upon increasing demands of the Kingdom for education and training, resulting in a growing need for more comprehensive and efficient administration, distribution, management, and supervision of educational sectors in order to meet the economic, social, and cultural needs of the populace.

General objectives of the education and training system include expansion of access to educational facilities and improvement in educational quality, and making education conform to fit the changing needs of the Kingdom and its economy.

In his Investiture Address to the Nation, His Majesty King Fahad Bin Abdulaziz stated his concern with the quantitative and qualitative improvement in education during the present Third Five-Year Development Plan for the Kingdom:

The next five-year plan will focus on two things: to build the Saudi individual who is able to contribute to development and is entitled to reap its benefits, and to improve the environment in which he lives.

One of our objectives is to see that the fast-moving wheel of education will maintain its momentum, and that the level of education will be improved both qualitatively and quantitatively. (KSA, Ministry of Planning, USSAJC, 1985)

The Third Five-Year Plan allocates 122.5 billion SR (i.e., 16 percent of total plan expenditures) to education. The latest official statistics available reflect total expenditures for 1980-1981 to be 25,823,287 SR. The total number of students in all educational facilities (see Table A4 in Appendix A for the breakdown of statistical data) was 1,682,148, with 95,233 teachers in 12,619 schools (see Table A1 in Appendix A).

Some of the major long-term objectives of the Third Five-Year Development Plan include:

To reduce the country's dependence on expatriate labor by increasing the productivity of available Saudi manpower through improved educational and training facilities, . . . [and] scientific job guidance. (KSA, Ministry of Planning, USSAJC, 1985)

Material and social objectives arise from the ethical principles of Islam and Saudi society's cultural values, which are reflected in:

- 1) The dedication of the government in upholding Islam and in maintaining its associated cultural values;
- 2) The importance attached both to the social well-being and personal fulfillment of all citizens, and to the creation of a wide range of institutions and services freely provided for these purposes. (KSA, Ministry of Planning, USSAJC, 1985)

The main principles of the development plans and transition from one development plan to the next permit achievement of long-term goals on a continuous basis with the objectives inherent in each plan with regard to education and training:

- 1) To maintain religious values of Islam by applying, propagating and fostering God's Shari'a;
- 2) To assure the defense of the religion;

5) To develop human resources through education [and] training. (KSA, Ministry of Planning, USSAJC, 1985)

In order to alleviate the present shortage of Saudi manpower, the Saudi Arabian National Center for Science and Technology (SANCST) (formed in 1977) is being relied upon to promote labor-saving technology in commercial and industrial enterprises. The Third Five-Year Development Plan envisages the achievement by SANCST of the basic objectives of transforming the material conditions of society by application and dissemination of science and technology; and by developing natural and human resources, thus reducing dependence on oil revenues and on foreign manpower.

Development of Human Resources

Throughout its development Saudi Arabia has faced a serious problem with critical manpower shortages in all sectors of the economy, despite intensive efforts to develop and utilize the indigenous population and import foreign labor. This situation has created hindrances to development and progress of social and economic goals at a time when demands for trained professional as well as other classes of occupations have been increasing at ever-growing rates with each passing year.

Expansion of education is seen as the key element in solving this complex problem, but the educational field itself has shortages of qualified teachers at all levels. Elementary teacher shortages have begun to drop, but this has

magnified shortages existing at higher educational levels, especially for higher and girls' education.

Although the building and construction program is quite vigorous, there is still a great shortage of educational facilities in rural and remote areas, which has served to make the accessibility of education difficult for rural dwellers. Where an intense desire for education exists among this sector of the population, it is necessary for students to travel great distances from home to obtain it.

Optimal use of available manpower is encouraged with the use of such plans as the special manpower training organization. Computers will be employed for manpower planning under the direction of the Central Department of Statistics. This entity has established a new computer center to facilitate effective use of information about human and material resources.

Workers employed in the labor force are administered and served by two government branches. Public civilian employment is under the jurisdiction of the Civil Service Bureau. Employment in the private sector is under jurisdiction of the Deputy Ministry of Labor Affairs. The Third Five-Year Development Plan programs focus on more efficient organization and management of operations through more complete and current information and statistics for these entities. The Civil Service Bureau has been directed to become more attentive to effective use and motivation of government employees. The Deputy Ministry of Labor Affairs must work

through the Interministerial Committee on Manpower to reduce dependence on foreign manpower and to concentrate on employment of Saudis in all economic activities.

Television in the Kingdom of Saudi Arabia

Public Television. Television was first broadcast in Saudi Arabia from Riyadh and Jeddah on July 17, 1965. In September 1979 color transmission was introduced after several months' trial period. Since its inception, rapid quantitative and qualitative development of a television network throughout the Kingdom has been taking place. Public television has a strong tendency toward religious and cultural programming (Saudi Arabian Television, pp. 65-78), in accordance with the information policy of the Kingdom developed by the Ministry of Information under supervision of the Supreme Information Council.

The principles and objectives of this policy emanate from Islam and Shari'a:

It aims at firmly establishing fear of Almighty God in the hearts of the people, upgrading the intellectual, cultural and sentimental levels of citizens, treating social and other problems, promoting the idea of obedience to God, His Messenger, parents and guardians, and inducing people to respect and abide by established order out of conviction.

All destructive trends, atheistic tendencies, materialistic philosophies as well as attempts to divert Muslims from their faith will be countered by the Saudi mass media, which will work at the service of the Kingdom's policy based on safeguarding the high interests of the citizens in particular and Arabs and Muslims in general.

This policy, which has been approved by the Council of Ministers and has received the royal endorsement, is expressed in 30 articles dealing with the various aspects of information work and is to be consid-

ered an integral part of the State's general policy. (KSA, Ministry of Information, Foreign Information Department, p. 139)

The policy of production by the private sector was introduced to give wider scope to Saudi artists' expression of their talents. Specific conditions were formed to ensure desired quality and standards.

In 1974 Saudi TV began linking with man-made satellites via Italy. By 1976 a standard TV station had been set up in Riyadh and in Taif, thus fully establishing all kinds of telecommunications with the rest of the world with both direct and indirect routes. The enormously vast area of the Kingdom and its unique topography, which made television transmission problems and obstacles without satellite transmission impossible, were thus overcome before completion of the ground network. The present transmission networks cover almost 80 percent of the Kingdom's vast area, but it is envisaged that 100 percent of populated areas can now be served with further construction of related utilities and facilities (KSA, Saudi Arabian Television, pp. 88-92).

Manpower and Training for Staffing Television Concerns.

A training program developed in cooperation with the Ministry of Education and the General Bureau of Civil Work is conducted at the Institute of Public Administration, the Radio and Telecommunication Institutes, Information Section of the Faculty of Arts at King Saud University, and the General Directorate of Engineering Affairs at the Ministry of Information, which is now attended by a total of 958 trainees.

The United States is training 90 candidates for operation and maintenance of equipment, while 30 were sent to France, 31 were sent to Arab countries, and 16 to Europe, the U.S., and Japan to train for information programs. These duties had previously been performed by foreign companies before the plan of the Ministry of Information was implemented (KSA, Ministry of Information, Gulf Center for Documentation and Communication, p. 53).

A great shortage of qualified and experienced telecommunications engineers and technicians continues to exist throughout the Kingdom, which hinders the potential scale of broadcasting expansion. Concentration on the need for training involves interim and long-term planning which takes several years to produce tangible results (Khalid, p. 63).

Educational Television in the Kingdom of Saudi Arabia

The Ministry of Information is responsible for radio and television broadcasting and programming. Three hours of cultural and 2.5 hours of educational TV programs are broadcast weekly, in addition to the half-hour program Toward a Better Future, aimed at combating illiteracy.

The need for closed-circuit TV has been created by the Kingdom's unique cultural and religious environment. Moreover, the critical need for implementation of some form of educational television became quite evident especially with enrollment of women beyond teacher capacities at the King Abdulaziz University. To fulfill this need the Educational

Technology Center was established in early 1972. Now there is an educational technology center at the Jeddah campus and at the Mecca campus.

Objectives of the Jeddah center are to:

1. Transmit live lectures to women students.
2. Transmit adult education programs for men.
3. Videotape university activities and ceremonies.
4. Produce educational films.
5. Provide technical supervision of conferences and public lectures and establish exhibits.
6. Become the center of Saudi social services.

Objectives of the Mecca center complement those of the Jeddah center:

1. Provide educational media courses and training.
2. Adapt modern educational technology to curricula development.
3. Provide training in use of educational media equipment to upgrade student skills and experiences.
4. Involve students and instructors in production of educational films for courses designed to simplify the teaching-learning process.
5. Extend limited facilities in response to the growing number especially of women students.
6. Teacher training in modern educational methods.
(KSA, Ministry of Information, Gulf Centre for Documentation and Communication and Saudi Arabian Television [MI,GC])

In some courses (sociology, descriptive indexing, history of libraries, physical geography, climatology, literary criticism of the English language) live TV presentation for women students completely supplants lectures. Television plays a complementary role in the courses' general administration, financial management, principles of economics, principles of law, mathematics, industrial and administrative psychology, banking, administrative diplomacy, organizational means and methods, and administrative growth. Over

100 hours of live TV broadcasting per month take place at the Jeddah center for women students, excluding repeat broadcasts.

Women students interact with male teachers by telephone during live TV lectures. At Jeddah each desk is equipped with a telephone; at Mecca there are two to four wall telephones in classrooms, with plans to install a telephone for each student. One television receiver is installed in classrooms of 20 to 30 students, and two receivers for 40 to 60 student classrooms. Lectures are about 50 to 55 minutes long with a ten minute break between lectures.

Students are usually provided with written copies of lectures. Oral examinations are conducted with telephone audio and simultaneous television video. Library facilities are closed to men on Thursday evenings to allow women access to their facilities to obtain references for studies and examinations, which has proven inadequate for women students.

Jeddah campus television is also used to conduct adult education for male students. Videotaped evening courses include mathematics, accounting, general administration, economics, sociology, and business management and were broadcast three days per week to 435 registered students in the 1973-1974 academic year, and to 807 enrolled students during the 1974-1975 academic year.

A survey conducted at the Jeddah center to measure student reaction to TV courses concluded that:

1. Nine percent of participants wanted additional course offerings.
2. The percentage which agreed with limiting lectures to two per evening was 82.5.
3. Ninety percent wanted lectures to begin an hour before the first evening prayer.
4. The percentage which felt programming was successful was 67.5.

To improve the adult education program, a majority of survey participants agreed that:

1. The reception hall should be converted to a suitable viewing room.
2. The TV receiver should be prepared for reception.¹
3. The receiver should be placed to avoid sun glare.
4. The reception hall should have a telephone to report audio/visual difficulties to the studio.
5. An organized schedule should be provided and closely followed.
6. The camera should focus on the chalkboard.
7. Lecture format organization should correspond to course materials. (KSA, MI, GC)

Many adult students felt the university should transmit lectures over public television channels to benefit students unable to attend classes. Some survey participants wished interaction with the teacher after each lecture.

The College of Education at Riyadh University established an Educational Technology Center with the objectives of providing:

1. Equipment and facilities to teachers and students.
2. Technical assistance in using educational media.
3. Course in the field of educational media.
4. Staff conferences in cooperation with the Ministry of Education for introducing and using new media.
5. Research on adaptability of educational technologies to Saudi cultural-educational conditions.

¹The intended meaning in this entry is "before the lecture begins" the set should be turned on, tuned in, volume adjusted, etc., in preparation for the lecture.

6. Closed-circuit television lectures for women.
7. Films and other aids to enhance instruction. (KSA, MI, GC)

This center is equipped with the personnel and equipment for static design and production, as well as production of educational radio and TV broadcasting. Closed-circuit TV is used for women's courses. The audio-visual library is accessible to teachers and students in classrooms or the appropriate section of the library hall. At each television studio, the teacher lectures in a room by himself, visually interacting with a studio technician via a two-way glass partition. It has been felt that absence of immediate visual student feedback adversely affects lecturer performance.

In 1975 a proposal was submitted to the Ministry of Education to offer a one-year post-university course to train teachers in educational technology. Almost 200 students are being trained in this field at the Riyadh College of Education.

Efforts to utilize television in the male educational system intensified in 1972. The greatest need for developing an effective audio-visual educational system lay in the area of replacing U.S. training and advisory personnel with well-trained, high-quality Saudi technical, administrative, and teaching staff, with retention of 2 or more U.S. expert teams until the program become operative. A program for in-service teacher training was needed to develop future instructional and technical resources. Subsequently, at the

invitation of the Ministry of Education, the University of Indiana prepared a complete operational development plan for an educational technology program. Three members of the Ministry of Education Division of Educational Television, representing curriculum, audio-visual production, and utilization of educational materials, went to the University of Indiana and the proposal was authorized for implementation.

A feasibility study commissioned by the Ministry of Education reported that Saudi educators feel key objectives to be:

1. Compensation for shortages of intermediate-level teachers.
2. Improving quality of instruction.
3. Improving quality of instruction at the intermediate level, especially in English, mathematics, and science.
4. Standardization of curriculum presentation.
5. Giving students a better foundation for entering secondary school.
6. Lower the percentage of students who fail exams at intermediate levels 1, 2 and 3.
7. Providing teachers time for more individual attention to students.
8. Employ English teachers whose native language is Arabic, rather than teachers from other Arab countries. (KSA, Ministry of Education, Center for Statistical Data and Educational Documentation, 1979-80)

The Ministry of Education and higher educational institutions are deeply interested in and supportive of developing educational and instructional television in response to the country's educational needs.

Conclusion

It is apparent from the foregoing study that the Kingdom of Saudi Arabia has undergone enormous changes in the

span of a few short decades. The introduction of a formal, organized system of education--which began only a little more than 50 years ago--is still being developed, revised, and expanded, and has not yet achieved results fully optimal for Saudi educational needs at any level.

The Kingdom has been catapulted from almost total isolation from the rest of the world into a position of economic and political prominence with worldwide influence. The Kingdom had no time to adequately develop an economic infrastructure on which to rest a solid foundation for the drastic changes taking place. It has, therefore, been necessary to utilize technical and administrative expertise from foreign sources while indigenous resources are being developed in the areas of physical facilities and all levels of the labor force.

A major concern of the government of the Kingdom and entities to which it delegates responsibility for education has been preservation of Islamic principles, values, and traditions. Real fear exists regarding the possibility that exposure of the youth to alien cultures will have an extremely detrimental effect, but to turn away from western assistance is inviting stagnation and denying progress and development of the economy which will raise the living standards of Saudi citizens.

Even though the government has allocated a large percentage of its total budget to the education sector, in addition to the importation of foreign technical assistance

and laborers to fill manpower shortages in all areas, development of physical educational facilities and manpower has not kept pace with the ever-increasing needs of the country. Saudi Arabia has a condition unique in the world, in the fact that its capital resources are greater than its capacity to develop at desired and acceptable rates.

The foregoing study reflects the fact that the government and related agencies have approached the problems of economic and social development cautiously, vigorously, and comprehensively. Great strides have been made and will continue if present patterns and trends remain constant. It is believed that the gap between desires, needs, and expectations and actual achievements will narrow in the course of time and with the help and guidance of Allah.

One hindrance to accessibility of higher educational facilities is seen by the necessity (in view of observance of Islamic Shari'a) of redundancy of educational facilities and services in order to maintain separation of the education of male and female students. Where redundancy is impossible or has yet to occur, a situation of unfulfilled need exists for female students. A solution to this problem has not yet been found, nor is one offered here as a result of examination of the educational infrastructure. Some progress has been made with technological invention and implementation of electronics (e.g., telephone and closed-circuit television) in classrooms. It is hoped that science will continue to provide answers to nagging problems which

have yet to be resolved. Educational television is providing expansion of services and facilities which could not otherwise be offered to the number of male and female students it presently serves. This is one area where it is felt the models being used in the West would be of tremendous value with adoption in the Kingdom, and without the detrimental effects which have been present with adoption of other aspects of the western educational models in areas of physical infrastructure and curriculum content.

II. The History of Educational Television

Definitions

Educational television (ETV) is an ambiguous term. "Educational" may be perceived to a one-shot documentary, or a continuing series related to a particular curriculum in schools. There may or may not be teacher follow-up on the lesson. Academic credit may or may not be involved before officially classifying it as "educational." News on a commercial station is also of "educational" value.

"Television" may be construed as satellite transmission of weather information, cultural programs on commercial television, its industrial uses to monitor the training of new employees, or film recorded on video cassettes using only one cassette player and a single television monitor.

The medium of educational television is not by itself "educational." A phrase more accurate than "educational television" would be "television (telecommunications) used for educational purposes." The only terms devised with obvious clear-cut distinction are "commercial" and "noncommercial" television in the "legal" definitions. Commercial and noncommercial television and radio all have educational value, but some of their educational value is questionable (Wood & Wylie, 1977, pp. 3-4).

Educational TV sells nothing; its programs are for minority audiences. It is very expensive, but gets no support from advertising and must exist on a lean budget and unstable financial structure consisting of gifts and school funds. Its purpose is for work as an excellent educational medium, but its entertainment feature, on which commercial television is based, is what drew its audiences and support. ETV contains excellent educational material as well as absorbing, entertaining information. A small proportion of commercial television programming is educational in nature, but it is usually broadcast during hours when audiences are smallest (Schramm, Lyle & de Sola Pool, 1963, pp. 1-2).

Educational TV refers to:

A means for enriching school curriculum with occasional programs loosely related to particular subject matter;

Series of demonstration programs for diverse home interests;

Broadcasting outstanding arts performances;

School administrative communications channels;

Informal adult education in various subjects;

Local and national industrial communications;

University continuing adult educational projects;

Live coverage of political and historical events;

A regularly scheduled major classroom resource;

Schoolwide distribution of conventional audio-visual films;

Agricultural educational projects in sparsely populated rural areas;

A confrontation forum for opposing interest groups;

In-service teacher educational projects;

Documentary series on issues of local and national interest;

A tool permitting student self-evaluation;

A single classroom overhead camera;

Relaying back pictures from remote areas.

Educational TV refers to pervasive, all-encompassing, diverse environment/medium/experience/message interpreted in the broadest terms. Telecommunications fully covers the scope of electronic media and includes other primary media, closed-circuit radio (i.e., nonbroadcast audio, tape recordings, and cassettes) and television, and open-circuit television and radio. It implies other specialized uses of electronic media such as slow-scan television, data transmission, facsimile, still pictures, computer communications, teletype, telephone, and related transmissions. Educational telecommunications (ETC) is noncommercial television and audio, and related electronic media transmission of purposeful, broadly educational communications for specific classroom objectives or general public enlightenment (Wood & Wylie, 1977, p. 5). Educational TV is divided into two major categories stemming from public broadcasting and instructional telecommunications, which are closely related and intertwined.

The term "public TV" was popularized by a 1967 Carnegie Commission Report and was quickly expanded to "public broadcasting." The Commission defined "public TV" (PTV) as "all that is of human interest and importance which is not at the moment appropriate or available for support by advertising and which is not arranged for formal instruction" (Wood & Wylie, 1977, p. 5), which applies generally to television and radio broadcasting for general home use in cultural, informational, public affairs, and informal educational programs.

"Instructional telecommunications" (ITC) means "direct instructional uses of television and related electronic media for specific teaching and learning applications in any formal educational or training institutional situation," which encompasses instructional media used in any formal setting, including military, business, industrial, law enforcement, etc. (Wood & Wylie, 1977, p. 6).

The concept of instructional telecommunications replaced the older term "instructional television" which, in its historical definition, referred loosely to in-school television use, but which was rather misleading since schools are concerned with more than just "instruction."

"School television" refers specifically to "any school-related use of television (or other telecommunications media), instructional or otherwise" (Wood & Wylie, 1977, p. 6). School TV includes direct observation applications, administrative messages, public relations uses, in-service

teacher training, and other staff training, self-evaluation set-ups for students, teachers, and other staff.

Educational TV has been used historically to refer to broad overall noncommercial open-circuit broadcasting and in-school closed-circuit uses; as well as more specific programming for general home use, evening noncredit courses, noncourse-structured programs. Educational broadcasters have begun rediscovering the middle ground of programming, that between public television and instructional television, often referred to as educational television. In this context ETV can be defined as

sequential, organized series of presentations having a specific body of content, usually designed primarily for noncredit viewing at home but often viewed additionally in the classroom. (Wood & Wylie, 1977, p. 6)

Many public broadcasting stations (PBS) use ETV to refer to school programming, and many telecommunications personnel use ETV synonymously with public broadcasting (Wood & Wylie, 1977, p. 6).

The recent term "telecourse" distinguishes itself as a distinctive method of instructional delivery from "television courses" and "televised courses." A telecourse is a sequence of instructional television programs supplemented by textbook and other readings; an illustrated correspondence course pacing student progress; a series of video-taped classroom lecture-demonstrations. Its producers purposely exploit the distinctive multisensory presentational proper-

ties of television, taking advantage of possibilities for on-site filming, creative editing, and studio enhancement.

A telecourse is a television presentation combining and supplementing discrete program units with printed matter and is organized to achieve definable, measurable instructional goals. It contains a study guide for credit students, readings and study units, examinations and progress tests, field trips, exercises for controlled observations and problem-solving, and home activities (Zigerell, 1983, p. 18).

History

The roots of instructional television begin in the 1930's, when Iowa State University, under the direction of Dr. E. B. Kurz, began experiments with "visual broadcast" teaching programs by telecasting programs and topic materials from several of its departments. During this time Purdue University and Kansas State College began using the scanning-disk method. In 1935 New York University presented experimental television programs over the NBC transmitter on top of the Empire State Building in New York City using the oconoscope system.

Television has been used for some time to broadcast special events. In 1939 a special broadcast of the World's Fair was televised. This use of public-service broadcasting also had commercial potential which was recognized by sponsors. World War II interrupted development of television, and not until 1946 did television again begin to progress as

an entertainment and instructional medium by resuming regular programming and network connections to various parts of the country.

Among the earliest classroom television programs were commercial stations in Philadelphia during 1948-1949. At this time these stations began broadcasting on a regular basis to public schools. These programs sought to improve instruction by supplementing curricula and to further public relations by demonstrating to the public modern educational practices.

The country's first television station with license to operate commercially held by an institution of higher learning was WOI-TV in Ames, Iowa at Iowa State College, which began its operations February 21, 1950. Also in 1950 a commercial station in Louisville, Kentucky offered a television assisted correspondence course for college credit. Western Reserve University began university-credit courses in 1951, which were telecast over a Cleveland commercial station. In 1952 full-day regular lessons were broadcast to 13 schools in 2 Montclair State College communities in New Jersey (Smith, 1961, pp. 5-6). In 1943 the first educational television per se went on the air in Houston, Texas (KUHT).

As early as 1946 educators began discussing the possibility of reserving certain television stations exclusively for education. Requests for commercial educational channels flowed in with such rapidity and in such large numbers that the Federal Communications Commission (FCC) "froze" all

television station assignments during the period 1948-1952 until a thorough study was performed so that channels could be properly distributed.

During the period of the freeze many organizations and interested parties worked on securing the allocation of educational channels: the National Education Association, the U.S. Office of Education, the National Association of Educational Broadcasters, the Fund for Adult Education (FAE), the Ford Foundation, the National Citizens' Committee on Educational Television, the Joint Council on Educational Television, and the National Educational Television and Radio Center.

The National Association of Educational Broadcasters (NAEB) was instrumental in securing allocation of educational channels from the FCC. A meeting of the U.S. Office of Education conducted October 16, 1950 organized forces to work for the allocation of exclusively educational channels. During this meeting the Joint Council on Educational Television (JCETV) was formed to act as a liaison representing education before the FCC. The culmination of all the agencies' and groups' efforts came about April 13, 1952 when the FCC assigned 246-250 exclusively educational channels to 242 communities across the country (Tarbet, 1961, pp. 4-5).

At the end of the "freeze" noncommercial educational television stations began to spring up all over the country: WBAY-TV, Green Bay, Wisconsin, March 17, 1953, Norbertine Fathers; KOMU-TV, Columbia, Missouri, December 20, 1953, Cu-

rators of the University of Missouri; WNDU-TV, South Bend, Indiana, July 15, 1955, Michiana Telecasting Corporation, University of Notre Dame; WWL-TV, New Orleans, Louisiana, September 7, 1957, Loyola University. By 1961 50 ETVs (educational television stations) funded largely by the Fund for Adult Education were broadcasting in 25 states to schools and colleges. The Ford Foundation and FAE assisted the organization of three agencies which facilitated in rapid strides in the use and knowledge of educational and instructional television. The National Citizens' Committee on Educational Television stimulated establishment of ETVs. The (JCETV) represented ten ETVs before government agencies, provided legal and technical advice to groups seeking to activate ETVs. The National Educational Television and Radio Center helped with programming and production of programs for distribution as well as other assistance.

In 1953 the Fund for the Advancement of Education initiated the National Program in Use of Television in Public Schools directed by Dr. A. J. Stoddard. A total of 178,000 elementary and secondary students became involved by 1960 in 15 cities and 3 states in a study of teaching large classes using television; 90-600 pupils with one to three teachers viewed lessons on receivers placed in a ratio of 1:30-40.

In 1956 the Chicago Board of Education offered an experimental junior college course for an Associate of Arts

degree on television, financed its first three years partially by the Fund for Advancement of Education. Hagerstown, Maryland undertook the first large-scale instructional experiment in television by linking 43 secondary and elementary schools with closed-circuit television, broadcasting several programs simultaneously in various subjects at various grade levels (Smith, 1961, pp. 8-10).

The National Defense Education Act (NDEA) of 1958 provided 81 grants by 1960 for instructional television research and experimentation with new media. In 1959 the Learning Resources Institute, supported by industries and foundations, began developing and exploring television's potentials by taking over administration of Continental Classroom in cooperation with the American Association of Colleges for Teacher Education; it also participated in the Midwest Program on Airborne Television Instruction, the most elaborate experiment every undertaken to that time. It involved 6 states and potentially 5 million students in more than 13,000 schools and colleges. Hundreds of less extensive experiments were financed by the Ford Foundation, NDEA, and other public and private funding (Smith, 1961, pp. 7-10).

By May 1960 there were 267 channels reserved for educational use, of which 47 were active, 34 VHF (Very High Frequency) and 13 UHF (Ultra High Frequency). In 1960 there were 569 school districts regularly using television instruction in the country. There were 117 colleges and

universities offering television credit courses. The Armed Forces used 21 closed-circuit television systems, and educational institutions used 144 (Tarbet, 1961, pp. 7-8).

By 1960-1961 an estimated 3 million students in 7,500 secondary and elementary schools were viewing noncommercial educational television. Closed-circuit television was used by an additional 1.5 million students. More than 400 higher educational institutions offered credit courses for more than 250,000 students on and off campus. "Continental Classroom" on NBC was watched by at least half of all the science teachers in the country (Hull, 1962, p. 336).

In higher education there were many important television experiments supported by FAE. Among them were the Chicago TV College, "Continental Classroom," Pennsylvania State University's campus use of television, and the Midwest Program on Airborne Television Instruction (MPATI). In the latter program an airplane was used to broadcast two channels while circling a four mile area, serving educational facilities over a 150-200 mile radius in parts of 6 states. This experiment lasted until 1966.

One of the most ambitious and successful continuing educational television efforts was started in 1956 by Chicago TV College, which offered a wide range of courses for Associate of Arts degrees (AA). Of 150,000 enrolled students, 80,000 were enrolled for college credit. It broadcast an average of 26 hours a week. About 400 pupils earned AA degrees solely from television instruction. In addition,

about 2,200 students of city colleges in Chicago graduated with AA degrees, taking about one semester of their work from television. For its first fifteen to sixteen years, TV College had day and evening broadcasts on PTV. Reorganization of the two year college system brought TV College courses under the administration of City-wide College, which was created in 1976.

The viability of adult ETV was reflected in a Ford Foundation project at Penn State University begun in 1956. The university produced twenty-eight on-campus television courses by 1966 with a peak enrollment in 1962 of 20,000, which leveled in later years to 13,000 (Purdy, 1983, pp. 30-31).

Experimentation was widespread and many experiments with instructional television were performed. Some universities owned and operated television stations, and some of these became centers of major state networks and leaders in the continuing education television field. Institutions of higher education which did not own a station or closed-circuit system were able to experiment with ETV when commercial networks became interested. CBS's "Sunrise Semester" series made available to its network stations in 1963, continues to the present time. Institutions all over the country rely on this series for inexpensive, widely available, high-quality credit television courses.

Instructional TV failed to become established during these years, partially because of the constant problem of

consistently available air time. Other constant problems for early ETV users were the lack of courseware and variety in production, quality, and course format of available series. Quickly produced, inexpensive programs filmed instructors in studio sets of classrooms. Educational TV had the same problems with television that exist in classrooms: uninspiring teaching. High-quality productions were too expensive and too few series were produced and distributed. The organizational arrangements which would allow ETV to work and survive had not been formulated (Purdy, 1983, pp. 31-32).

In 1966 massive research into instructional television practically stopped because it was the general consensus that all the basic information about it had been gained. By this time the Ford Foundation and the federal government had poured some \$200 million into educational television (Hilliard & Field, 1976, pp. 9-10).

Despite this, the groundwork was laid for continuing education using television. The Federal Educational Television Facilities Act of 1962 began to fund public television stations. Creation of the Great Plains Regional Instructional Library in 1963 provided the basis for a continuing education distribution system of programs and series (Purdy, 1983, p. 32).

During 1967-1979 the use of radio and television for continuing education became established. This became possible due to:

Creation of national public television and radio broadcasting systems;

National broadcasting of several excellent television series for use in continuing education by hundreds of institutions;

Rapid, high-quality growth in productions by several telecourse producers;

Development of successful systems for distributing and offering televised courses with cooperation between user stations and colleges. (Purdy, 1983, p. 33)

The Corporation for Public Broadcasting (CPB) was created by the Public Broadcasting Act of 1967 and began to function by 1968, charged with:

The responsibility of assisting new stations in getting on the air, establishing one or more systems of interconnection, obtaining grants from federal and other sources, providing funds to support program production, making grants to stations to support local programming, and conducting research and training projects. (Purdy, 1983, p. 33)

CPB was created to serve the Public Broadcasting Service (PBS), and to select, schedule, and distribute programming through the widespread system of PBS stations. This was the beginning of a nationwide system of public television which began when PBS began operation in October, 1969. The Corporation also performed these services for radio. National Public Radio was created in 1971 as a public radio network counterpart of PBS to produce and distribute programs, as well as to make specific grants to public radio stations.

Several series with excellent video and academic quality started in 1975 with the first nationwide PBS broadcast of The Ascent of Man. Two of its airings were used by an estimated 40,000 students in 420 institutions throughout the U.S. Other series demonstrated continuing success and high

quality production over PBS and showed that when combined with good print materials they could give higher education institutions relatively low-cost credit courses, in addition to providing test systems to support telecourse students and decide whether they wanted to lease telecourses, which was more expensive (Purdy, 1983, pp. 33-34).

Problems revealed by this kind of ETV included unpredictable enrollment; inability of publishers to meet orders on time; difficulty of schools in getting information on series content and exact broadcast dates and times; and non-broadcast rights in time to make decisions, public information catalogues, and attract enrollment by releasing local publicity. Students and school officials with little understanding of PBS structure, how scheduling decisions were made, cost of air time and broadcast of the series itself plied station personnel with inquiries. Courses were not incorporated into ongoing institutional curricula unless the series was available for nonbroadcast use and the educational institution could afford the cost of purchasing the rights.

In the early 1960's several institutions began producing visually more exciting telecourses. The first of these in 1974 came from Miami-Dade Community College District, Man and the Environment, with thirty half-hour television programs, text, study guide, and test materials; and Coast Community College District's anthropology series Dimensions in Culture, both of which could be leased with responsibil-

ity for broadcast time taken by the lessee. Of ten telecourses produced by Coast Community College District's introductory psychology course released in 1975 has been most popular, with over 50,000 students enrolled (Purdy, 1983, p. 34).

More and more new telecourses are cooperatively produced. One of the first models of a consortium for telecourse production and use was the Southern California Consortium for Community College Television created in 1970. It consisted of 35 two-year colleges and enrolled thousands of students in many diverse courses. Schools also cooperatively produce one course, such as Dallas County Community College District's design and production leadership in developing its American government course, with financial support and academic advice from Chicago City Colleges, Coast Community College District, and Tarrant County Junior College District.

The critical shortage of suitable courseware in the 1950's and 1960's was reduced. The 1977 Mass Media College Catalog described 95 courses in production or available in many subjects. But because of these courses' five-year life and increased broadcast via cable and satellite, the need for quality programming still exists.

The only notable federal support of ETV came in 1971 with the first of a series of grants from the National Institute of Education to build the State University of Nebraska (SUN). This university served off-campus adults in

continuing education. In 1974 SUN led to the creation of the University of Mid-America (UMA), a consortium of midwest universities, for production and design of courses. By 1983 nine courses were completed, which fell far short of the fifty planned by 1980, due to its heavy commitment to research.

The use of telecourses by higher education institutions has grown phenomenally since 1967. User institutions join consortia to offer telecourses to offset lease and air time costs, and this gives them more power over television stations. It also aids TV stations by allowing work with one agency rather than dozens (Purdy, 1983, pp. 34.35). Some cooperative users of telecourses include the Bay Area Community College Television Consortium, the Southern California Consortium for Community College Television, Maryland College of the Air, and Connecticut's TV College.

Most of these systems offer two to six telecourses per semester. The institutions developed very sophisticated student support service systems; air time including PBS, commercial and cable; and institutional arrangement of telecourses, including faculty members' role, course offering cost, and local publicity. Telecourses attract older, often employed students to convenient education rather than competing with on-campus courses (Purdy, 1983, pp. 35-36).

Methods of Use: Television Systems

Broadcast. Broadcast television is the most popular form of ITV. Commercial and public/educational television stations broadcast programs and series of instructional use and useful as supplemental material and as curricular segments in the classroom. When ITV is presented over a broadcast station, the programs can be seen in schools and in homes, which strengthens cooperation between home and school. Broadcast VHF and UHF instructional TV can be received on all modern televisions.

CATV. CATV (Community Antenna Television) and cable television consist of a distribution center with master antenna that makes or receives television signals and sends them by coaxial cable to specified televisions hooked to the cable system. The higher-quality CATV antenna permits receiving more channels and broadcasting better-quality pictures. CATV operators must have an FCC license. The FCC requires them to carry all local stations, and ETV, public access, and local government channels free of charge.

ITFS. Instructional Television Fixed Service was developed in the mid-1960's. It functions like broadcast television, but is classified as a microwave ("point-to-point") system using the 2,500 MHz frequency band and requires a special receiving antenna and down-converter at receiving sites. This makes it an "open-closed" circuit combination because its special equipment can be installed where many people can watch it, but it is too expensive for

individual home use. Its chief advantage is versatility since the FCC allows each licensee to operate four channels simultaneously.

Subcommittees of the FCC National Committee for Full Development of ITFS in many communities cooperatively use frequencies, resources, and funds for many educational institutions in their areas (the FCC disbanded the Committee in 1973). Schools like ITFS transmitters (\$20,000 each) because they are comparatively inexpensive and are approximately as large as a four-drawer filing cabinet. ITFS provides scheduling flexibility and retains local control of programming and facilities. It covers a radius of about 20 miles in flat areas, and 5 miles in the city, which is sufficient for most school districts. In late 1975 ITFS had 600 channels on some 200 systems. Some systems developed elaborate networks covering several cities, such as the Archdiocese of Manhattan, New York. ITFS has not grown more rapidly because Congress has not allocated funds specifically for it.

Though ITFS is one-way, the FCC has authorized two-way response systems. A student can have audio talk-back to a central studio or any other classroom on the circuit by pressing a button. As of late 1975 it was used very little even though it had been quite successful where it was tried. The FCC allocated 28 channels in any community; it is low-cost, small in size, and readily available. ITFS is used for formal instruction, in-service education, professional

and vocational training and information, and for administrative traffic.

MDS. Multi-point Distribution Service functions like ITFS. It is licensed by the FCC as a common-carrier, but rents its system's time. School systems without funds to purchase and maintain their own facilities can use MDS beneficially on an occasional basis.

CCTV. Closed-circuit Television is similar to CATV, but its systems are unlicensed so that anyone can purchase its cable and equipment and operate CCTV to program any desired material. It is used for diverse tasks--to connect different parts of one school, or for simple surveillance in businesses. Schools use a master antenna system linking all television sets in a building by a cable. More elaborate CCTV transmits ITV among several buildings or several schools by cable or microwave with multi-channel capacity. Programs for CCTV come from films, and video tapes and cassettes. CCTV transmission centers build libraries by renting series from ITV distribution agencies (e.g. Agency for Instructional TV); by arranging to make (obtain) copies of ITV lessons broadcast by ETV; and by renting (buying) series from educational producers. Teachers may obtain permission to copy and/or use materials from programs broadcast on commercial and public/educational stations. The best (and most expensive) CCTV systems have their own production facilities and equipment. When CCTV production facilities are in-

stalled they can directly involve teachers and students in design and production materials.

Two-way cable in the classroom, especially in combination with a computer, improves instruction and allows students to respond to material on individual TV screens, and gives teachers resources to instruct more students with more material than imagined ten years ago. Extracurricular activities allowing intramural participation by students and teachers without travel were curtailed in the 1970's due to budgetary restrictions (Hilliard & Field, 1976, pp. 24-26).

Education TV on PBS Networks

The Corporation for Public Broadcasting (CPB) and other organizations transformed crude ETV in the 1950s into a network of PBS stations with programming for a wide range of audiences, including specialized programs for children such as Sesame Street (Liebert et.al., 1982, p. 180). American land-grant colleges and state universities owned most of the 38 ETV stations through 1936, operating their stations with the aim of providing educational services to the general public (Blakely, 1979, pp. 53-54). This tradition of extension services was initiated when the Secretary of Commerce began to issue licenses to ETV stations in early 1921, the licensees providing the bases for a national system of educational broadcasting (Blakely, 1979, p. 54).

Educational programming began on NBC and CBS in 1930, CBS with Music Appreciation Hour (1928-1942) and NBC with

University of the Air, among others. None of the first programs lasted long because audiences were small and the discussion-debate format did not appeal to people in postwar years.

During the period 1935 to 1950 the FCC and the broadcasting industry engaged in an intensive power struggle concerned with airwave use. As a result of investigation begun in 1938, the FCC brought about three significant changes in network practices embodied in its "Report of Chain Broadcasting" and "Chain Broadcasting Regulations," issued through its licensing authority: NBC's 1943 sale of the Blue Network to Edward Noble, who renamed it the American Broadcasting Company (ABC); strengthening of affiliate stations' control over programming by loosening network-affiliate contracts; and limiting the number of stations a network could own. Despite NBC and CBS opposition, these regulations were upheld by the Supreme Court's May 10, 1943 decision. The continuous struggle between the FCC and the broadcasting industry was revealed, allowing power to be shifted in favor back to the industry, by two significant events: the FCC's attempt to compare promises with performances to determine whether to renew station licenses (set forth in "Public Service Responsibilities of Broadcast Licensees," or the "Blue Book"), which was defeated by the industry; and the industry's defeat of FCC's "Avco ruling," in which the FCC tried to force station owners to solicit competitive bids in station sales so that the FCC could

choose the "best" applicant to serve public interest (Blakely, 1979, pp. 73-74).

When Edwin H. Armstrong solved technical problems in development of FM broadcasting, the FCC's problem of frequency allocation became complicated by the conflict between demands for FM radio station licensing and television licensing, and by resources for R & D. Moreover, the FCC had to decide what standards to require of TV and when to set them. On April 30, 1941 the FCC adopted standards suggested by the industry-wide National Television System Committee, which allocated 18 VHF channels to TV with full commercial operations. But before commercial TV could become established, World War II broke out and production of TVs and radios stopped. Of the 100 channels made available by the FCC on June 27, 1945, 20 were for educational stations and the rest for commercial operators. Full commercial TV operations were not authorized again by the FCC until March 18, 1947, when 12 VHF channels were allocated. Races for licenses began and tables of allocations brought much interference in TV signals. Therefore, on September 29, 1948, the FCC suspended applications for TV stations (Blakely, 1979, pp. 75-81).

National ETV for the general public: 1951-1956. On March 22, 1951 the FCC published the "Third Notice of Proposed Rule Making," when members of the previous Ad Hoc Committee on ETV met to decide whether to form a continuing organization to promote ETV. The Commission received state-

ments from interested parties for a year; in April, 1952 made reservations; and in May, 1953 declared channels were reserved "indefinitely." These steps each tested educators' desire and ability to establish a national ETV system, which caused educators and educational broadcasters to be vigorous in attempts to pass the test with help and guidance from 1951-1956 by the FAE and the Ford Foundation (Blakely, 1979, p. 81).

The FCC reported it would resume licensing VHF and UHF TV stations June 2, 1952. It reserved 242 channels for educational stations. Reservations were not made for channels in "closed" cities where all VHF channels had already been licensed (e.g. New York, Los Angeles, Washington, Philadelphia, Detroit, Cleveland, Buffalo), and would not consider petitions to change reservations until June 2, 1953 (Blakely, 1979, pp. 89-90). Then in April, 1952 the FCC said that despite this, assignments were reserved indefinitely except where individual assignments were successfully challenged by other applicants (Blakely, 1979, p. 90).

During 1953-1955 the FCC rejected all petitions for deletion of reserved channels, created 16 new assignments for educational stations, and waived many financial qualifications in approving applications for ETV stations. The FCC implemented the first rule-making proceeding for deletion of a VHF reservation on June 2, 1955 when a Des Moines station wanted a UHF channel reserved for education which it already operated, and a license to operate another VHF channel for

commercial TV. This was denied for Des Moines, because there was no organization ready to occupy the station reserved for education. The FCC ordered a station in College Station, Texas to shift from a VHF station to a UHF station for the same reason in July, 1956, and soon thereafter Eugene, Oregon lost a reserved station for the same reason (Blakely, 1979, pp. 92-93).

1952-1958: Educational Television and Radio Center.

The Educational Television and Radio Center was incorporated November 21, 1952 and its 12-member board met for the first time December 5. The Center's goals were broad, but its chief objective was to provide program service to ETV stations. It tried to ensure that educational needs of the general public were met as well as those of school children; it provided regularly scheduled programs to affiliated stations of the quantity and quality needed by the stations; and it contracted separate entities to produce programs. The ETRC aim was toward achieving desired effects rather than attracting large audiences. The Center felt it could fully exploit educational programs with the use of series and by reinforcing and supplementing other educational experiences rather than replacing them. The Center's headquarters was established in the fall of 1953 at Ann Arbor, Michigan (Blakely, 1979, pp. 104-105).

The ETRC began occasional programming service January 1, 1954, and on May 18, 1954 began regular shipments to four

stations. By the end of 1954 the ETRC devised a "block system" that scheduled programming blocks of four to five stations each. The "Flexible Service" plan begun in 1954 included in each week's program 1.5 hours of programs chosen by the stations from the Center's library. By mid-1956 ETRC programs made up 25 percent of all educational programs broadcast. The ETRC's "Extended Service" provided outlets through commercial stations in areas with no ETV stations and by 1957 over 682 programs from 51 series were broadcast over 21 commercial stations in 15 states, figures which rose sharply in 1957 (Blakely, 1979, pp. 104-105).

At the end of 1955 the ETRC took over the functions of the National Citizens Committee for Educational Television that was dissolved by the Ford Foundation at that time. In December, 1955 the Ford Foundation assigned the newly created Joint Council on Educational Television (JCETV) and the National Association of Educational Broadcasters (NAEB) tasks including national publicity for ETV; consultation and training for production of programs; non-broadcast use of programs; procuring continuing financial support for R & D of the effects of broadcasting of ETV (Blakely, 1979, pp. 106-107).

The Center acquired programs produced by affiliated stations in an exchange program, from existing film material, and from its own contracts for production. Exchange programs were economical, but the quality of the programs

was poor. Contract-produced programs were of better quality, but more expensive. And existing film material was usually inappropriate or involved legal difficulties such as copyright.

Program selection required the ETRC to consider appropriateness of content to meet station demands, and a balance and variety the Center itself sought. Quality of programs was judged by several standards (e.g., artistry, technical quality, etc.). Content also had to meet the FAE's criteria in order for the Center to retain FAE funding (i.e., topics of an international or national nature, or humanities), while the ETRC's President, Harry Newburn, like academic programs. Consequently, the sought balance became increasingly unsatisfactory to stations.

Distribution was negatively affected by the Center's forced reliance on postal services for lack of instant or delayed broadcast means. The Center was unable to give concentrated national publicity and promotion of programs broadcast locally because programs were mailed and because of block scheduling. About half of ETRC channels were ETV stations and almost two-thirds of reserve channels were UHF, and there were no ETV stations in New York City or Washington, D. C.

The ETRC did not have enough money to fulfill its intended function. Until 1956 almost all funding came from the FAE, and subsequently from the Ford Foundation (Blakely, 1979, pp. 108-110).

The ETRC needed good relationships with several national associations and agencies to achieve broad educational goals, and with affiliated stations to serve ETV stations. Differences between ETRC's and the NAEB's history (which resulted in the fact that the ETRC could be ended at the Ford Foundation's whim, while the NAEB would continue regardless of the Foundation's decisions), and the two entities divergent but overlapping concerns, moved the Center toward a more ambitious role and led the NAEB to become more effective.

The national programming service to accommodate wide audiences, which allowed affiliated stations to maintain sustained programming, was provided by the ETRC, which necessitated agreement between the Center and the stations regarding program distribution, audiences, intended effects, etc. With the growing number of stations, general agreement became more difficult due to the stations' divergent philosophies, goals, and target audiences. The Center could maintain communication with stations by having field program associates and/or holding periodic meetings with the affiliates, neither of which worked well due to the individual concerns of program associates, as well as irregularity of meetings and meetings being taken up with details rather than questions of philosophy, goals, or other substantive issues.

Formation of the Affiliates Committee formalized station managers' growing dissatisfaction with the Center.

Shortly after a meeting between the Committee and the Center, Newburn resigned (September 5, 1958). Formation of the Committee was also a reaction against the NAEB. The Committee developed an effective mechanism to exert stations' power and indicated the growing strength and unity of stations in their ability to work together for common interests (Blakely, 1979, pp. 110-112).

Educational TV over PBS: 1956-1963. The Ford Foundation increased aid to ETV for general audiences, and along with the FAE gave strong support to ITV without an overall plan. The federal government gave large amounts of aid for R & D to equip stations. All these activities were often unrelated. But many significant advances were made during 1951-1956 despite this (Blakely, 1979, p. 115).

By 1951 the FCC had decided it should reserve channels because ETV stations were necessary. By 1955 the Ford Foundation decided it should support some other alternative to preserve high quality cultural and informational ETV programming.

The number of ETV stations increased substantially during 1951-1956. Availability of magnetic tapes lowered production costs and heightened technical quality. Grants for VTRs sped up developing reserve channels, but by 1959 it became apparent that federal government aid was necessary to construct and maintain more than a minimal 40 to 50 stations. All UHF stations suffered technical handicaps that made them inferior to VHF. Differences in institutional

ownership and support among the four kinds of ETV stations persisted and grew. School stations neglected broadcasts for general audiences; state-agency stations shunned controversy; university stations broadcast for elite audiences; and community corporation stations programmed by budget rather than audience needs and desired effects. The ratio of the number of community stations to the total number of ETV stations fell as the number of university, school, and state-agency stations rose. But community station audiences were larger and some had better resources for production of programs for national distribution (Blakely, 1979, pp. 117-119).

In 1945 wireless interconnection of broadcasting stations became technically feasible and allowed stations to transmit to and receive from one or more other stations so that broadcasts could be done simultaneously or recorded and stored for later or repeated use. In September, 1959 the NAEB and the U.S. Office of Education met to decide the feasibility of state and regional networks for radio and TV. By 1963 ETV networks governed by state agencies were operating or being implemented in many states. Regional networks linked individual stations as well as state and regional networks (Blakely, 1979, pp. 121-122).

Meanwhile plans for ETV station associations and networks sprang up around the country. However, two unresolved problems remained: the relationship between broadcasting for general audiences and that for instruction; and

the relationship between stations, and state and regional networks of stations, and the National Educational Television and Radio Center (NETRC). The NETRC's primary concern of broadcasting for general audiences conflicted with instructional TV. In fact, stations needed programs from both the national center and the state/regional networks. One reason for the conflict was money, since stations paid dues to both the NETRC and regional networks. In addition, local stations did not participate in decisions made by NETRC about programming, but did have a voice in programming decisions of state/regional networks (Blakely, 1979, pp. 119-124).

When Newburn resigned as president of the ETRC (1959), "National" was added to the title and the center began large-scale planning and bold action. The first thing the Center did was move its headquarters to New York City; then it asked the Affiliates Committee to recommend policy changes; next it agreed on a new president, John F. White.

Two weeks after White took over on October 1, 1958, he proposed creation of three new vice-presidential positions; the establishment of a station-relations department; hiring permanent program staff; basing major Center activities in New York City; setting up a Washington office; and looking for money outside the FAE.

Station managers' opinions varied about NETRC's new policy of separating the objectives of obtaining the highest quality affordable programs from that of building stations'

production abilities. All the stations liked to get money for productions, but none of them liked any of the programs produced except their own. Tensions between the NETRC and community stations heightened.

On April 2, 1959 the Ford Foundation announced its last grant to the Center. Consequently, the Center decided to spend money for programs that would attract more money for the budget during 1959-1963. By early 1961 the Center had implemented most of White's suggestions. The NAEB, which had moved to Washington in 1960, took over lobbying for ETV formerly done by the JCETV. White for the NETRC and William Harley for the NAEB agreed on a general division of functions, but friction was created by overlaps and misunderstandings.

The center became active in establishing stations and continuously improved and expanded programming service. Program quality rose, but not as fast as stations or audiences wished due to underfinancing. Distribution and communication improved. "Prime time" scheduling began in September, 1961 to show models of ETV programming. Later in the year the NETRC included ITV. White's idea that a national ETV service should be modeled after commercial networks was not well accepted by affiliated stations, which again reflected their desire for a voice in NETRC decisions. The diverse efforts of the NETRC to gain support were unsuccessful. But a substantial victory became apparent July 2, 1963

when the NETRC announced its separation from educational radio, which led the Ford Foundation to grant it \$6 million for a year in a letter received October 1, 1963. There were, however, a great many stringent restrictions along with newly acquired capabilities as a result (Blakely, 1979, pp. 128-134).

By November 17, 1963 the NAEB became aware of the possibility of its breaking into several small, specialized organizations. Passage of the National Defense Education Act of 1958 by the Congress gave researchers of ETV ample funds for a ten-year period during which they engaged in several projects. The report of one study caused the FCC to develop the use of 31 low-power transmission channels on July 30, 1963 for educational purposes, resulting in the establishment of Instructional Television Fixed Service (ITFS), which began wide-scale interconnected broadcasting among educational open and closed-circuit systems. The NAEB was guided through its reorganization which began in 1963 (Blakely, 1979, pp. 134-137).

A rift appeared between ETV and ITV broadcasters, whose objectives differed. ETV was concerned primarily with broadcasting for general audiences, and ITV broadcasters focused their efforts on broadcasting primarily for students in educational institutions. Channel reservations and activation of ETV stations coincided with the peak of "the educational crisis" (which began after World War II when enrollments at all levels in schools increased), when finan-

cial needs of educational institutions surged along with public demands for more effective and efficient education (Blakely, 1979, pp. 137-138).

Impact of ETV on PBS Viewers

Audience size. Where there is an established, well-programmed, community-owned station, one out of four adults view educational television at least once each week. San Francisco, Pittsburgh, and Boston have the greatest number ratio of regular viewers.

Other educational television channels draw approximately three to fifteen percent of all television viewers. In what may be termed an "average" community, about 15 percent of adult television viewers watch educational television at least once a week, while another 30 to 35 percent of adult viewers watch somewhat less often. However, audiences vary greatly with the kinds of programs broadcast, their educational and cultural levels, and the available financial resources and support of the local particular educational television stations. A major role is also played by the experience of the educational television station's staff and technical personnel, as well as the attractiveness and quality of program contents and subjects with its relatively to the environment existing in the community in which it is broadcast. Studies (Schramm, 1962, pp. 346-348) show educational television audiences are growing rapidly.

Audience viewing time. An average of three to four programs a week are viewed by regular viewers who tend to be very selective about what programs they watch. They seldom watch two ETV programs successively. Regular users view ETV an average of one to two hours a week. The few UHF users watch VHF more than the former. Only enthusiastic viewers regularly view UHF.

Audience characteristics. Though ETV is viewed by all kinds of people, its audience is heavily populated with more highly educated people who go to lectures, concerts, and meetings; who read books; who are politically active and tend to be opinion leaders, i.e., cultured, active, probably influential.

In some places, such as small university communities, half of viewers are professional people and 25 percent are professors and their families. However, the audience also includes those with a very limited education, while some highly educated people, and even those possessing the above mentioned characteristics, do not view ETV. What is broadcast and how it is broadcast affects the composition of the audience.

Families with grade-school children tend to watch more ETV than families with younger or older children, and these families watch less commercial television than other families of the same composition, which indicates that ETV watchers substitute ETV for commercial television without

adding on time spent watching television (Schramm, 1962, pp. 348-351).

Motivation for viewing. Some people watch ETV because they do not like what is being broadcast at the particular time on commercial television, some seek self-improvement, some are merely curious, and some are aesthetically hungry. Education TV is perceived quite differently by regular viewers than it is by occasional viewers, and the reverse is true with commercial television. In general, ETV attracts all kinds of people for diverse reasons.

Nonviewers do not watch ETV for various reasons, too. The reasons they give are interesting, logical, and convincing. The most common reason for not watching ETV is that they think of television as a source of entertainment rather than learning (i.e., working) and they do not wish to change this habit. The second most popular reason was that they merely did not feel they know enough about ETV; its programming is not well advertised. And some people just do not like ETV program content, seeing them as dull or of lower quality than programs produced on commercial television, and other people are just "lazy" (Schramm, 1962, pp. 349-353).

When ETV is used by viewers for education rather than just as "television," they evaluate it highly, and when it is thought of in terms of "television" rather than education, people rate it lower than commercial television.

Educational TV audiences contain a high proportion of influential persons and opinion leaders. Through this por-

tion of the audience, ETV distributes its information and exerts influence far beyond its small, restricted sphere of viewers (Schramm, 1960, pp. 33, 35).

External learners. Instructional TV over PBS permits individuals to shape their educational program. Flexibility and selectivity are the chief criteria in media-based educational programs for remote students. Though individual needs, desires, and inclinations are recognized by educators and a general trend is toward meeting individual needs of students, group-based instruction still does not and cannot account for the uniqueness of each individual. Flexibility gives diverse opportunities, and selectivity provides the means for a selection of purpose and selection of the medium of instruction to match one's own purpose.

Distant instructional programs rely heavily on printed materials which, when used on campus, do not acquire the same prominent status. Rather than an instructor choosing instructional materials, media-based courses are designed and developed by teams of instructional technologists, curriculum/learning specialists, editors, and faculty who bring together individual talents into a quality program.

Television is the most visible component in an open learning course. Its power as a tool of communication ;is unmatched in bringing alive ideas and concepts. Some institutions give live on-campus sessions with the instructor to distant learners. Home study allows students to avoid

scheduled meetings and study at their own pace; and it permits computer monitoring of student progress, giving educators more time to develop instructional programs in a quality manner. Computers have been developed to a state where students may now interact with computer systems from their own homes. Computerized instructional feedback systems offer computer-based systems for individualizing instruction.

Instructional TV serves to introduce on-campus programs to distant learners and provide them with the confidence to seek on-campus enrollment in new college experiences. Some students must learn at a distance or not at all, and most of them succeed with assistance from external motivation or not at all. Students enroll in ITV courses not realizing their capacity for independent study. On-campus students who enroll in remote ITV courses are more likely to complete on-campus courses and make better grades (Kelly & Anandam, 1983, pp. 182-193).

Impact of ETV on the Learning Process

Students' ready acceptance of and satisfaction with off-campus ITV is promoted by its convenience, availability, and the quality which assures personal enrichment, satisfaction, and continued use with similar courses. Learners usually hear about it by word of mouth. Even those who do not complete ITV courses they begin continue to watch ITV programs. Older, employed off-campus students are even more

satisfied with ITV than full-time college students that are younger (Kelly & Anandam, 1983, pp. 182-193).

In 1956 research found that ITV: a) made no significant different among ITV and conventional students; b) made no significant difference on short-term retention tests on subject-matter content among ITV and conventionally taught students; c) acceptance varied though the tendency was toward rejection; d) might have possessed a "novelty effect," but this was uncertain; e) contribution to attitude change toward subject-matter content or gain in critical thinking ability (i.e., "intangibles" of education) was unclear; f) acceptance by adults in open broadcast was usually very high (Kumata, 1960, pp. 176-178).¹

Learning subject matter. Where ITV is used to augment regular classroom instruction in elementary and secondary schools, it enhances information gain and retention. Instruction TV increases students' attention because of its novelty. At grade school levels ITV integration as a segment of the total school and learning experience provides a well-rounded teaching effort (Kumata, 1960, pp. 178-180).

¹I do not agree with Kumata's statement that "the assumption which is implicit and seldom question, however, is that present conventional teaching methods produce the optimum possible in the teaching situation and therefore provide an adequate base for comparison [with televised instruction]" (p. 178). His research was compiled prior to 1960 (the copyright date of the source), and there is no question, at least in my own mind, that educational methods and techniques, as well as curriculum content have tremendously improved since that time, though this is another area outside the scope of this paper.

The number of school children and college students receiving instruction by ITV began to grow exponentially four years after its inception. Much progress had been made nine years after its inception toward understanding the strengths and weaknesses of ITV; it had great power to attract and hold attention and interest; an unequalled ability to share good teaching and excellent demonstration; the quality of instruction plays just as significant a role in ITV as in the classroom; ITV is much more effective in some kinds of teaching than in others, particularly when integrated into classroom programs and individual activities, than when it is used as the sole instructional medium (Schramm, et.al., 1963, p. 165).

Educational TV is basically used for cultural programs, intellectual stimulation, information, and educational opportunities, and a practical aid as perceived by viewers. Most users see ETV as informative, useful, interesting, and satisfying; many see it to be enjoyable; and some see it as hard work (Schramm, et. al., 1963, p. 168).

Kumata's report on research conducted during 1956-1959 (1960, pp. 184-185) indicates: ITV is more effective among lower grade level children and adult students than the range of students in between these two; ITV is more effective when it is viewed voluntarily rather than in structured environments; the amount of planning and integration into the educative process is greater and of higher quality with the use of ITV than solely conventional teaching.

Aversa and Forman (quoted in Kumata, 1960, pp. 177-178) found through their research that: a) television is important in giving life and color to educational materials; b) when emphasis is on information rather than human experience, students demand comprehensive, quality information; c) "on-location" productions are preferred over studio materials; d) users like best ITV materials consisting of in-depth interviews and case studies; e) selection of interviews must take into account relevance, overall purpose, and representativeness; f) whenever possible narrations should be accompanied by (film or still) visual aids; g) each program should present a true summary which is introduced as such, or only a few topics should be treated in depth; h) television personalities at ease in their roles should be employed; i) background music should be used with caution, especially when the narrator is speaking; j) gear dialogue to the target audience; k) important visuals in the studio set should always be explained; l) topics presented superficially or not at all in written materials accompanying courses should not be treated tersely or superficially by the ITV instructor; m) topics presented should always be accompanied by visuals.

III. The History of Attitudes to Educational TV

Instructional television began at Iowa State University in 1932 with intermittent broadcasting of educational programs. Iowa State College began regular operation as a non-profit educational station in February, 1950. Educational television formally began with the formation of the Joint Committee on ETV in 1950, which consisted of representatives of the National Association of Broadcasters and several entities from the educational field. It obtained public and educators' support and developed program resources. By 1972 there were 260 ETV stations coast-to-coast under individual or joint regional or state network operation, but with most affiliated with the nationwide National Educational Television Network (NET) (including KOAP-TV, Portland, Oregon, which was the broadcasting agent for the Televised Learning Package (TLP)).

ETV's rapid development during the post-Korean War years raised concerns about its efficacy as a teacher substitute/replacement. Nationwide annual standardized test comparative data showed students' efficient learning of cognitive skills from ITV. One study showed 5th graders measured against national norms gained 1.9 years in basic overall school curriculum in one year of ITV. Rural students

one-quarter to one-half grade below urban students caught up with the latter after 3 years of ITV. Achievement test comparisons during 1956-1961 between conventional and TV teaching of 4 subject matter areas showed 25 percent of the TV groups to have significantly higher scores, and generally positive overall results. Some researchers contest these results due to prearranged ideal conditions in ITV classrooms not existing in non-ITV classrooms (Gharaj, 1981; O'Brien, 1973).

Some Oregon educators spent two years planning and executing TLP by considering content, implementation ideas, series outline, and 5th-6th grade needs and preferences in problem-solving. The missing feature of a built-in program evaluation has been a chronic shortcoming of ETV-ITV (Gharaj, 1981; O'Brien, 1975).

Subtitles and rest pauses improve learning. Instructional TV effectiveness is aided by repeat showings of programs, but teacher follow-up of first viewings is even better. Effectiveness is not affected by group size. The younger the student, the more effective ITV is, possibly due to greater orientation toward TV and better acceptance before influence of peers and social environment; and varying age group preferences for the medium; and ability of TV teachers to stimulate/motivate especially younger students (Gharaj, 1981; O'Brien, 1973).

Instructional TV school system use efficiency depends on coordination, joint planning, and continuing communica-

tion between studio/classroom teachers. Studies of all age groups and many subject matter areas show that ITV is an efficient tool for learning cognitive skills.

Even though contradictory research results on TV impact on student attitudes exist for a variety of possible reasons, some generalizations have emerged. Attitude change by film comes when the viewer feels trust/confidence in the communicator exhibited by particular emotional/psychological characteristics. Media content affects attitude change, especially when related directly to film content. If medium bias does not deviate far from that of the viewer, the direction of attitude change can be influenced. Clues to the viewer's expected characteristics are given by knowledge of his identification with the communicator. Some studies show TV groups have more favorable attitudes and responses to course concepts, materials, and requirements than control classrooms, while others do not. Negative initial attitudes are created using ITV to teach some subjects, and negative attitudes in general are difficult to overcome. Sometimes attitudes change, but not in the desired direction. For TV to be most effective in attitude change, the communicator should be prestigious and the subject closely related to the needs, purposes, and values of the viewer (Gharaj, 1981; O'Brien, 1973).

Discussion

In this brief discussion many feasible applications of ITV for attitude change were not covered (e.g., learning-disabled students; mentally/physically disabled students; the promotion of more efficient and broader use of materials/resources, especially where they are deficient; broadcasts over PBS to reach homebound students; and many more). It would seem there are as many uses of ITV/ETV for attitude change as for teaching any subject.

For example, the degree of achievement of desired results is dependent upon a diverse variety of variables: The attitudes of participants toward each other [i.e., teacher-student and vice versa] and toward subject area and content; the subjective nature of testing for achievement of learning goals and their degree of achievement; the quality of presentation, teaching techniques, ITV equipment, production techniques, etc.; student receptiveness, age, and the personality characteristics of each individual; the time of day of presentation; the applicability of subject matter to students' personal environment.

One of the most essential skills in the educative process, which obviously has been forgotten in practice (if not also in theory), is how to study. The teaching methods of repetitive rote-memorization and assimilation of formal facts is "pooh-poohed" in current literature as an error of bygone days in teaching. However, in most basic subjects (e.g., concepts to be learned in spelling/reading, mathemat-

ics, history, geography, etc.) learning concrete theoretical rules of application remains the key element to knowledge and understanding. It is declared here that educators must teach students not only problem-solving skills (i.e., how to formulate analyses and theories hypothetically and creatively), but just as importantly, established conceptual rules and formal facts. The application of ITV to attitude change toward problem-solving should therefore perhaps be expanded to include the study process and study techniques as a major element. It is also conceivable that the study process and study techniques could be presented as a separate subject in itself, although its very close interrelationship to problem-solving techniques and attitudes is quite apparent (Gharaj, 1981; O'Brien, 1973).

Instructional TV school system use presents several advantages and disadvantages. One of the advantages is quality assurance and standardization of content and presentation of subject matter which cannot even be measured in instruction by individual teachers in each classroom. Instructional TV would eliminate negative teacher and student attitudes toward each other and personality "conflicts" that cause classroom disruptions at the elementary and high school levels. Disadvantages include elimination of the opportunity for immediate audience feedback which allows the instructor to adjust his mode of presentation in order to maximize enthusiasm and motivation; the opportunity for student participation (which has the effect of raising morale, motivation,

and interest) is negated; and along this same line, ITV does not permit the student-audience to ask for clarification or explanation of points and issues which are not completely understood during the course of lecture presentation. If a concept is not grasped early on in a lecture, it may mean that contingent concepts later in the lecture only lead to further confusion in students' minds.

An advantage of ITV for older students which promotes cost-effectiveness, is the ability of educational institutions to provide ITV-equipped classrooms that are unsupervised by teaching staff. An instructor could be centrally located in the building for questions and problems which might arise during ITV broadcasts which take place simultaneously in several classrooms. The main duties of the staff member would probably be preparation of classrooms for ITV presentations, brief remarks about presentations before and after programs, conducting examinations (although this could also be performed by ITV teachers) and grading them, and other auxiliary tasks outside the physical capacities of television (Gharaj, 1981; O'Brien, 1973).

One ITV theory states that it is best used as a supplement to conventional teaching. There are opinions that ITV necessitates a great deal of redundancy in employing teaching staff, since up to three teachers are employed at different production stages of a program for perhaps one class. This does not speak well for cost effectiveness, which is uppermost in the minds of educational administrators today

since they face stringent budget constraints. This phenomenon could be eliminated by film presentations over closed-circuit and/or regional broadcasts, so that (barring revision of curriculum) presentations could be repeated throughout districts and for a number of years. This design would eliminate the need for such close production and broadcast coordination between studio and classroom ITV teachers and production staff. It is noted at this point that the Oregon PBS station airs a number of courses for college credit whose design could easily be adapted for on-campus use. The courses presently aired over PBS do, as a matter of fact, include attitudes toward problem-solving in such subject matter areas as "the psychology of management," "understanding human behavior" (a basic psychology course), and others. Some of the programs are aimed toward raising the enthusiasm of young people toward learning in general.

Many people feel that at the present time the ambiguous attitude of the Reagan administration toward education (i.e., at one moment paying lip-service to the importance of education and its accessibility to all and its quality, and at the next drastically reducing federal funding for educational programs) makes the application, and for that matter the mere expansion of the use of ITV in public school systems, a moot discussion (Gharaj, 1981 & O'Brien, 1973).

CHAPTER III

SCALE METHODOLOGY AND ITEM SELECTION

The purpose of this study was to determine attitudes toward educational TV in Saudi Arabia and to measure any significant differences, if there were any, in the attitude of students, teachers, and administrators to learning by educational TV. Following from this a secondary purpose was to investigate particular educational programs in Saudi Arabia in order to discover how the programs are perceived to affect students' progress. This study will involve the comparison of responses to a set of questions by three different groups in the sciences and humanities:

- 1) The first group was students.
- 2) The second group was teachers.
- 3) The third group was administrators.

The specific objectives of this study were to identify and to analyze:

- 1) The attitudes of science students in grades 10 through 12 toward educational TV.
- 2) The attitudes of teachers toward educational TV.
- 3) The attitudes of humanities students in grades 10 through 12 toward educational TV.
- 4) The attitudes of administrators toward educational TV.

5) The attitudes of the above four personnel groups toward educational TV, based upon a questionnaire composed of two types of questions.

a) The normal questions require "yes" or "no" answers.

b) Attitude questions. The Rensis Likert Scaling Procedure was used to develop a 25 item scale.

This chapter includes a description of the procedures used in a Likert-type scale measuring attitudes toward educational TV programs (The Method of Summated Ratings). Attitudes have been scaled for 55 years, beginning with the historical work of Bogardus (1925). In 1929 Murphy established 5 major "attitude areas": international relations, race relations, economic conflicts, political conflicts, and religion. In 1937, Thurstone developed a scale methodology which asked subjects to objectively assess the direction and intensity of a statement on an 11-point scale. From these data the investigator calculated the scale value of each statement (the median of responses) and the level of agreement among judges (Q-value). This process of scale development is very laborious since it requires the development of scale value and Q-values for each of up to 200 statements. This led to the development of Likert scale (Likert, 1943) and its subsequent modification. The choice of the Likert approach is based on the criteria of efficiency, and because it produces coefficients of reliability and validity similar to more complex methods (Edwards,

1957). The Likert scale is an unidimensional scale which measures attitudes along a single dimension, from very positive toward the attitude object to very negative.

The instrument designed for this investigation was a Likert scale to measure attitudes toward educational TV programs. The following procedure is the standard technique employed when Likert-type scales are being used (Edwards, 1957).

1) The first step in the construction of an attitude scale was the collection of a large number of statements (150) about the attitude object (attitudes toward educational TV programs). Items were developed from a variety of sources, including articles about high school students, and research on educational TV programs.

Thurstone and Chave (1929), Likert (1932), and Edwards (1957) are in general agreement about the criteria to be applied to attitude statements. Edwards (pp. 13-14) listed the criteria as follows:

1. Avoid statements that refer to the past rather than to the present.
2. Avoid statements that may be interpreted in more than one way.
3. Avoid statements that are factual or capable of being interpreted as factual.
4. Avoid statements that are irrelevant to the psychological object under consideration.
5. Avoid statements that are likely to be endorsed by almost everyone or by almost no one.
6. Select statements that are believed to cover the entire range of the effective scale of interest.
7. Keep the language of the statements simple, clear, and direct.
8. Statements should be short, rarely exceeding 20 words.

9. Each statement should contain only one complete thought.
10. Statements containing universals such as all, always, none and never often introduce ambiguity and should be avoided.
11. Words such as only, just, merely, and others of similar nature should be used with care and moderation in writing complex sentences.
12. Whenever possible, statements should be in the form of simple sentences rather than in the form of compound or complex sentences.
13. Avoid the use of words that may not be understood by those who are to be given the completed scale.
14. Avoid the use of double negatives.

2) The second step was to organize these questions into a Likert-style scale, based on criteria for editing the statements (Edwards, 1957, p. 4).

3) The third step was to obtain 200 male university students randomly selected from King Abdulaziz University to answer these statements by using the Likert scale method. According to the total score we divided the students into high score group and low score group and did the following:

Test the statistical hypothesis

$$H: U_h = U_l$$

U_h is the population mean for the high score group.

U_l is the population mean for the low score group

$$T = \frac{\bar{X}_h - \bar{X}_l}{\text{Se}_{\bar{X}_h - \bar{X}_l}}$$

where

\bar{X}_h mean for the high group

\bar{X}_l mean for the low group

$\text{Se}_{\bar{X}_h - \bar{X}_l}$ standard error for $\bar{X}_h - \bar{X}_l$

note $\bar{x} = \frac{\sum x_i}{n}$, where

x_i is the i^{th} observation (score)

and

n is the sample size

and

$$s^2_{e\bar{x}_h - \bar{x}_1} = \frac{s^2_h + s^2_l}{n}$$

where

$$s^2 = \frac{\sum (x_i - \bar{x})^2}{n - 1}$$

4) The fourth step was to rank the questions and choose the top 25 for the final scale according to the score, using standard normal deviation.

5) The fifth step was the administration of the instrument.

6) The sixth step was application of the LSD formula.

7) All the districts (3) in the Western Province of Saudi Arabia were selected for the study:

Table 4. Scale Sample, Three Saudi Arabian Education Districts.

Mecca			Al-Madinah			Jeddah		
S	T	A	S	T	A	S	T	A
100	24	24	100	24	24	100	24	24
<u>Sc</u> <u>Hu</u>								
50 50	12 12	12 12	50 50	12 12	12 12	50 50	12 12	12 12

Notes: S = Students Sc = Science
 T = Teachers Hu = Humanities
 A = Administrators

8) The 25 questions were applied to the sample of 444 students, teachers, and administrators representing the

fields of science and humanities in the three districts to test the seven hypotheses.

9) Sample selected by use of random sampling technique, with the sample representing approximately 25 percent of the total population.

10) The two-ways ANOVA was used to determine the acceptance or rejection of the null hypothesis based on the .05 level of significance.

Design of the Study

This study is based on a two-part questionnaire.

Regular Questions

There were 38 questions which required "yes" or "no" answers. This questionnaire was designed to obtain data about the teachers' and students' feelings. This part of the questionnaire was added to Part Two after the final test with the attitude questions was administered to qualify for one group.

Attitude Questions

A total of 200 participated from King Abdulaziz University, all of whom were chosen randomly. Using Edwards' criteria, 150 statements were collected and edited. The item pool was then administered with Likert-type instructions and response categories from

Strongly Agree (1)

Agree (2)

Uncertain (3)

Disagree (4)

Strongly Disagree (5)

The final Attitude scale was then constructed by choosing the 25 items from the total list which show the greatest discrimination. These items were used with the same five "agree-disagree" response categories and scoring was done in the same way.

Those to whom the questionnaire was administered were divided into three districts:

Table 5. Selected Sample

	D1 <u>Mecca</u>	D2 <u>Al-Madinah</u>	D3 <u>Jeddah</u>
Students	100	100	100
Teachers	24	24	24
Administrators	24	24	24

Three schools were randomly selected from each district and the students, teachers, and administrators were randomly selected from each school.

CHAPTER IV

RESULTS AND ANALYSIS OF THE DATA

The data collected from the three groups, students, teachers, and administrators, are presented and analyzed in this chapter.

This chapter is divided into four parts as follows:

- 1) Part I. The administration of the instrument.
- 2) Part II. The first questionnaire.
- 3) Part III. The 150 question "attitude questionnaire" prior to sorting.
- 4) Part IV. The "attitude questionnaire" after sorting out the 25 questions highest on the scale.

Part I: Administration of the Instrument

The questionnaire used in this study was divided into two sections. The first section establishes the personal background of the respondent and the second section questioned the levels of concern that the respondent students, teachers, and administrators had for educational TV in Saudi Arabia.

After the doctoral research proposal was approved by the doctoral committee, the major advisor was asked to write a letter of recommendation supporting the proposal to the

Saudi Arabian Educational Mission. The Saudi Arabian Educational Mission then approved the doctoral research proposal and the instrumentation and responded with a letter of recommendation.

The letters of recommendation from the researcher's major advisor and the Saudi Arabian Educational Mission, including a copy of the doctoral research proposal, were forwarded to the Ministry of Higher Education for approval of the questionnaire. The Ministry approved visits to three educational districts in the Western Province of Saudi Arabia and the questionnaire and released a letter of recommendation to the principals of the nine secondary schools in the three districts requesting that they provide all possible assistance in the collection of the data. The secretary of the Computer Department of King Abdulaziz University typed and printed the two questionnaires, which were then given to all students, teachers, and administrators in the sample. Respondents were asked to return the questionnaires within 10 days.

Treatment of Data

When the questionnaires were returned they were tabulated. The data were analyzed by using the Statistical Package for the Social Sciences (SPSS). The data and the results of the analysis are presented in this chapter.

Part II: The First Questionnaire

As mentioned in Chapter I, Saudi Arabian television has presented three different educational series:

- 1) The Guide to Success
- 2) To Whom the Cup
- 3) Our Students in the Field

These programs were also described in Chapter I.

As noted in Chapter III the population for this study was selected from three educational districts in the Western Province of Saudi Arabia (Mecca, Al-Madinah, Jeddah). In each district the 148 people to whom the questionnaire was administered were divided into three additional groups:

- 1) Students: 50 students of science and 50 students of the humanities.
- 2) Teachers: twelve teachers of science and twelve teachers in the humanities.
- 3) Administrators: twelve science administrators and twelve humanities administrators.

The questions administered to each person were divided into four categories:

- 1) Reaction questions (one to fourteen).
- 2) Opinion questions (fifteen to seventeen).
- 3) Comparison questions (eighteen to twenty).
- 4) Continuing questions (twenty-one and twenty-two).

A tabulation of the responses to the questionnaire was established, indicating the percentage of positive responses

to each question by science and humanities students, teachers, and administrators, respectively, in each of the three districts. Each question posed the possibility of three different responses concerning the three educational series presented on Saudi Arabian television. The results are included in Tables 6 through 11. In addition, a comprehensive table, Table 12, indicates the percentage of positive responses on the part of all participants, no matter their field of study or activity.

To summarize the responses, it was found that the program Our Students in the Field was given the greatest positive response, "0.95" for all districts, basically because it held the interest of the observers and presented subject material that was easy to understand. The response was also positive, "0.74" for all districts, to the program To Whom the Cup, for the principle reason that this program focused upon the curriculum that students studied in their schools.

In accordance with the overall response it was found that the general opinion was that the three programs were not presented to their best advantage (e.g., the times of presentation were questioned). Both the quality of production and the quality of presentation were thought to be inadequate. In some instances a program only partially covered the curricular material assigned for the course. The general opinion of all three groups in all districts was that the quality of production of educational material might

Table 6. Students of Science, First Questionnaire.

Q-Nr.	Overall			Mecca			Al-Madinah			Jeddah		
	A	B	C	A	B	C	A	B	C	A	B	C
<u>Reaction Questions</u>												
1	0.15	0.83	0.95	0.21	0.84	0.94	0.20	0.82	0.96	0.14	0.82	0.96
2	0.35	0.61	0.75	0.38	0.58	0.76	0.42	0.64	0.82	0.24	0.62	0.68
3	0.30	0.47	0.48	0.32	0.48	0.50	0.36	0.46	0.54	0.22	0.46	0.40
4	0.27	0.43	0.47	0.22	0.40	0.44	0.40	0.50	0.54	0.20	0.38	0.42
5	0.22	0.33	0.39	0.26	0.28	0.30	0.24	0.34	0.44	0.16	0.36	0.42
6	0.35	0.49	0.54	0.32	0.46	0.58	0.48	0.50	0.58	0.24	0.50	0.46
7	0.29	0.42	0.42	0.30	0.40	0.38	0.34	0.38	0.44	0.24	0.48	0.44
8	0.34	0.43	0.50	0.40	0.40	0.42	0.40	0.42	0.54	0.22	0.48	0.54
9	0.35	0.53	0.55	0.32	0.48	0.54	0.48	0.56	0.60	0.24	0.54	0.52
10	0.36	0.49	0.52	0.34	0.46	0.46	0.48	0.56	0.58	0.26	0.44	0.52
11	0.42	0.59	0.61	0.42	0.56	0.62	0.58	0.66	0.64	0.26	0.54	0.56
12	0.27	0.39	0.47	0.30	0.44	0.52	0.26	0.34	0.34	0.24	0.40	0.54
13	0.15	0.27	0.25	0.12	0.22	0.24	0.20	0.22	0.16	0.12	0.36	0.34
14	0.49	0.73	0.79	0.54	0.78	0.84	0.58	0.76	0.78	0.36	0.66	0.74
<u>Opinion Questions</u>												
15	0.47	0.56	0.76	0.44	0.68	0.74	0.60	0.64	0.76	0.38	0.62	0.78
16	0.51	0.74	0.80	0.52	0.86	0.56	0.56	0.66	0.74	0.44	0.74	0.80
17	0.41	0.53	0.55	0.38	0.54	0.50	0.52	0.60	0.62	0.32	0.44	0.54
<u>Comparison Questions</u>												
18	0.35	0.67	0.79	0.38	0.70	0.84	0.42	0.64	0.78	0.24	0.66	0.76
19	0.39	0.57	0.65	0.40	0.56	0.70	0.48	0.58	0.60	0.28	0.56	0.64
20	0.28	0.51	0.66	0.28	0.50	0.72	0.42	0.54	0.66	0.14	0.50	0.60
<u>Continuing Questions</u>												
21	0.22	0.27	0.32	0.22	0.30	0.28	0.24	0.26	0.36	0.20	0.24	0.32
22	0.36	0.61	0.61	0.38	0.62	0.56	0.44	0.62	0.64	0.26	0.60	0.64

Note 1: A - The series The Guide to Success.
 B - The series To Whom the Cup.
 C - The series Our Students in the Field.
 Q-Nr. - Question number.

Note 2: The values indicated reflect positive response ratios in percentages; for the questions, see Appendix C.

Table 7. Students of Humanities, First Questionnaire.

Q-Nr.	Overall			Mecca			Al-Madinah			Jeddah		
	A	B	C	A	B	C	A	B	C	A	B	C
<u>Reaction Questions</u>												
1	0.20	0.91	0.95	0.22	0.88	0.98	0.16	0.94	0.94	0.22	0.92	0.94
2	0.32	0.56	0.77	0.36	0.52	0.74	0.24	0.68	0.76	0.36	0.76	0.82
3	0.27	0.51	0.51	0.28	0.44	0.50	0.30	0.56	0.58	0.24	0.52	0.46
4	0.19	0.49	0.43	0.16	0.42	0.40	0.18	0.50	0.48	0.22	0.54	0.42
5	0.23	0.35	0.39	0.24	0.28	0.34	0.14	0.40	0.44	0.32	0.38	0.40
6	0.32	0.53	0.60	0.30	0.52	0.58	0.34	0.58	0.64	0.32	0.48	0.58
7	0.23	0.41	0.45	0.22	0.38	0.48	0.22	0.46	0.50	0.26	0.38	0.38
8	0.27	0.49	0.53	0.30	0.40	0.50	0.24	0.58	0.58	0.28	0.50	0.50
9	0.33	0.51	0.55	0.38	0.40	0.54	0.28	0.56	0.56	0.34	0.56	0.56
10	0.27	0.43	0.47	0.24	0.44	0.48	0.26	0.40	0.44	0.30	0.46	0.50
11	0.33	0.53	0.57	0.26	0.44	0.50	0.36	0.56	0.60	0.36	0.58	0.62
12	0.24	0.39	0.47	0.30	0.44	0.56	0.26	0.40	0.44	0.16	0.34	0.40
13	0.10	0.29	0.27	0.12	0.30	0.32	0.10	0.30	0.32	0.08	0.28	0.18
14	0.44	0.71	0.75	0.42	0.60	0.66	0.46	0.78	0.80	0.44	0.76	0.78
<u>Opinion Questions</u>												
15	0.38	0.69	0.77	0.40	0.64	0.82	0.38	0.72	0.76	0.36	0.72	0.72
16	0.50	0.80	0.85	0.54	0.74	0.82	0.52	0.84	0.92	0.44	0.82	0.80
17	0.37	0.55	0.60	0.46	0.54	0.64	0.40	0.66	0.70	0.24	0.44	0.47
<u>Comparison Questions</u>												
18	0.31	0.69	0.81	0.32	0.56	0.82	0.28	0.76	0.82	0.34	0.74	0.80
19	0.41	0.65	0.74	0.42	0.58	0.68	0.36	0.72	0.72	0.44	0.64	0.82
20	0.27	0.41	0.59	0.22	0.28	0.54	0.26	0.48	0.62	0.32	0.46	0.62
<u>Continuing Questions</u>												
21	0.13	0.23	0.20	0.18	0.28	0.18	0.14	0.10	0.12	0.12	0.32	0.30
22	0.29	0.64	0.68	0.30	0.54	0.64	0.32	0.74	0.80	0.24	0.64	0.60

Note 1: A - The series The Guide to Success.
 B - The series To Whom the Cup.
 C - The series Our Students in the Field.
 Q-Nr. - Question number.

Note 2: The values indicated reflect positive response ratios in percentages; for the questions, see Appendix C.

Table 8. Teachers of Science, First Questionnaire.

Q-Nr.	<u>Overall</u>			<u>Mecca</u>			<u>Al-Madinah</u>			<u>Jeddah</u>		
	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>
<u>Reaction Questions</u>												
1	0.31	0.81	0.97	0.33	0.75	0.00	0.33	0.83	0.92	0.25	0.83	0.00
2	0.33	0.56	0.72	0.25	0.58	0.83	0.33	0.42	0.58	0.42	0.67	0.75
3	0.31	0.33	0.50	0.50	0.58	0.75	0.25	0.25	0.33	0.17	0.17	0.42
4	0.33	0.31	0.44	0.33	0.25	0.55	0.42	0.33	0.33	0.25	0.33	0.50
5	0.36	0.22	0.39	0.50	0.25	0.50	0.25	0.17	0.17	0.33	0.25	0.50
6	0.47	0.39	0.64	0.58	0.30	0.75	0.50	0.33	0.58	0.33	0.33	0.58
7	0.33	0.36	0.53	0.33	0.30	0.58	0.50	0.33	0.50	0.17	0.25	0.50
8	0.42	0.36	0.53	0.58	0.50	0.67	0.50	0.33	0.58	0.17	0.25	0.33
9	0.42	0.39	0.56	0.42	0.42	0.67	0.50	0.58	0.58	0.33	0.17	0.42
10	0.47	0.33	0.30	0.50	0.50	0.58	0.58	0.33	0.58	0.33	0.17	0.33
11	0.47	0.39	0.61	0.58	0.42	0.67	0.50	0.42	0.58	0.33	0.33	0.58
12	0.17	0.25	0.36	0.17	0.25	0.17	0.08	0.08	0.33	0.25	0.42	0.58
13	0.17	0.11	0.22	0.33	0.25	0.42	0.17	0.08	0.08	0.00	0.00	0.17
14	0.64	0.72	0.81	0.67	0.83	0.00	0.67	0.58	0.50	0.58	0.75	0.92
<u>Opinion Questions</u>												
15	0.39	0.56	0.78	0.33	0.58	0.83	0.42	0.50	0.67	0.42	0.58	0.83
16	0.44	0.42	0.47	0.58	0.58	0.67	0.58	0.33	0.42	0.17	0.33	0.33
17	0.28	0.28	0.28	0.33	0.33	0.33	0.42	0.33	0.33	0.17	0.17	0.17
<u>Comparison Questions</u>												
18	0.44	0.42	0.58	0.58	0.50	0.75	0.33	0.42	0.50	0.42	0.33	0.55
19	0.44	0.63	0.44	0.58	0.33	0.58	0.42	0.50	0.42	0.33	0.25	0.33
20	0.28	0.36	0.56	0.25	0.25	0.50	0.33	0.50	0.58	0.25	0.33	0.58
<u>Continuing Questions</u>												
21	0.00	0.03	0.08	0.00	0.08	0.00	0.00	0.00	0.17	0.00	0.00	0.08
22	0.42	0.53	0.69	0.42	0.50	0.75	0.50	0.50	0.58	0.33	0.58	0.75

Note 1: A - The series The Guide to Success.
 B - The series To Whom the Cup.
 C - The series Our Students in the Field.
 Q-Nr. - Question number.

Note 2: The values indicated reflect positive response ratios in percentages; for the questions, see Appendix C.

Table 9. Teachers of Humanities, First Questionnaire.

Q-Nr.	Overall			Mecca			Al-Madinah			Jeddah		
	A	B	C	A	B	C	A	B	C	A	B	C
<u>Reaction Questions</u>												
1	0.36	0.81	0.92	0.25	0.58	0.92	0.33	0.00	0.92	0.50	0.83	0.92
2	0.42	0.53	0.67	0.25	0.33	0.50	0.50	0.83	0.92	0.50	0.42	0.58
3	0.28	0.39	0.47	0.25	0.33	0.50	0.33	0.58	0.67	0.25	0.25	0.25
4	0.25	0.31	0.39	0.25	0.25	0.33	0.17	0.33	0.42	0.33	0.33	0.42
5	0.33	0.44	0.50	0.33	0.42	0.58	0.42	0.75	0.67	0.25	0.17	0.25
6	0.39	0.47	0.58	0.33	0.25	0.42	0.50	0.83	0.75	0.33	0.33	0.58
7	0.25	0.39	0.44	0.17	0.25	0.33	0.42	0.67	0.58	0.17	0.25	0.42
8	0.50	0.58	0.64	0.42	0.50	0.58	0.42	0.58	0.58	0.67	0.67	0.75
9	0.36	0.44	0.56	0.33	0.33	0.50	0.42	0.67	0.67	0.33	0.33	0.50
10	0.25	0.33	0.42	0.25	0.33	0.50	0.17	0.33	0.33	0.33	0.33	0.42
11	0.47	0.61	0.64	0.25	0.42	0.42	0.58	0.83	0.83	0.58	0.58	0.67
12	0.25	0.31	0.33	0.25	0.33	0.33	0.25	0.33	0.33	0.25	0.25	0.33
13	0.11	0.14	0.17	0.17	0.25	0.25	0.17	0.17	0.25	0.00	0.00	0.00
14	0.64	0.67	0.86	0.30	0.42	0.75	0.75	0.83	0.92	0.67	0.75	0.92
<u>Opinion Questions</u>												
15	0.36	0.58	0.78	0.25	0.33	0.83	0.42	0.83	0.92	0.42	0.58	0.58
16	0.47	0.53	0.67	0.17	0.33	0.58	0.67	0.83	0.75	0.58	0.42	0.67
17	0.25	0.31	0.31	0.17	0.25	0.33	0.33	0.33	0.33	0.25	0.33	0.25
<u>Comparison Questions</u>												
18	0.44	0.67	0.75	0.17	0.33	0.58	0.67	0.00	0.92	0.50	0.67	0.75
19	0.44	0.47	0.64	0.25	0.25	0.42	0.75	0.00	0.92	0.33	0.17	0.58
20	0.44	0.44	0.53	0.42	0.33	0.42	0.50	0.67	0.67	0.42	0.33	0.50
<u>Continuing Questions</u>												
21	0.19	0.22	0.22	0.25	0.33	0.33	0.25	0.25	0.25	0.08	0.08	0.08
22	0.44	0.64	0.72	0.42	0.42	0.58	0.33	0.67	0.67	0.58	0.83	0.92

Note 1: A - The series The Guide to Success.
 B - The series To Whom the Cup.
 C - The series Our Students in the Field.
 Q-Nr. - Question number.

Note 2: The values indicated reflect positive response ratios in percentages; for the questions, see Appendix C.

Table 10. Administrators of Science, First Questionnaire.

Q-Nr.	Overall			Mecca			Al-Madinah			Jeddah		
	A	B	C	A	B	C	A	B	C	A	B	C
<u>Reaction Questions</u>												
1	0.33	0.83	0.97	0.42	0.75	0.00	0.25	0.92	0.92	0.33	0.83	0.00
2	0.50	0.67	0.72	0.50	0.50	0.67	0.58	0.67	0.58	0.42	0.83	0.92
3	0.44	0.39	0.53	0.50	0.33	0.58	0.58	0.58	0.67	0.25	0.25	0.33
4	0.42	0.33	0.44	0.33	0.25	0.33	0.58	0.50	0.50	0.33	0.25	0.50
5	0.28	0.25	0.25	0.25	0.17	0.17	0.42	0.33	0.33	0.17	0.25	0.25
6	0.39	0.39	0.56	0.42	0.25	0.50	0.50	0.50	0.58	0.25	0.42	0.58
7	0.28	0.33	0.42	0.33	0.25	0.33	0.33	0.33	0.33	0.17	0.42	0.58
8	0.33	0.33	0.44	0.33	0.17	0.33	0.42	0.42	0.42	0.25	0.42	0.58
9	0.39	0.53	0.56	0.42	0.50	0.50	0.50	0.58	0.58	0.25	0.50	0.58
10	0.33	0.36	0.44	0.33	0.25	0.42	0.42	0.42	0.42	0.25	0.42	0.50
11	0.39	0.50	0.58	0.42	0.42	0.58	0.42	0.50	0.42	0.33	0.58	0.75
12	0.19	0.33	0.42	0.33	0.25	0.50	0.08	0.33	0.33	0.17	0.42	0.42
13	0.22	0.28	0.33	0.17	0.17	0.25	0.25	0.42	0.42	0.25	0.25	0.33
14	0.58	0.75	0.83	0.75	0.75	0.92	0.67	0.83	0.83	0.33	0.67	0.75
<u>Opinion Questions</u>												
15	0.47	0.67	0.75	0.58	0.75	0.83	0.67	0.67	0.75	0.17	0.58	0.76
16	0.47	0.50	0.53	0.67	0.58	0.75	0.50	0.42	0.42	0.25	0.50	0.42
17	0.25	0.28	0.33	0.33	0.25	0.33	0.33	0.42	0.42	0.08	0.17	0.25
<u>Comparison Questions</u>												
18	0.56	0.69	0.78	0.58	0.75	0.92	0.67	0.75	0.73	0.42	0.58	0.76
19	0.56	0.56	0.64	0.58	0.58	0.83	0.67	0.67	0.67	0.42	0.42	0.42
20	0.39	0.39	0.56	0.50	0.50	0.75	0.33	0.25	0.33	0.33	0.42	0.58
<u>Continuing Questions</u>												
21	0.11	0.11	0.11	0.00	0.00	0.00	0.08	0.17	0.17	0.25	0.17	0.17
22	0.44	0.61	0.75	0.50	0.50	0.67	0.58	0.75	0.75	0.25	0.58	0.83

Note 1: A - The series The Guide to Success.
 B - The series To Whom the Cup.
 C - The series Our Students in the Field.
 Q-Nr. - Question number.

Note 2: The values indicated reflect positive response ratios in percentages; for the questions, see Appendix C.

Table 11. Administrators of Humanities, First Questionnaire.

Q-Nr.	Overall			Mecca			Al-Madinah			Jeddah		
	A	B	C	A	B	C	A	B	C	A	B	C
<u>Reaction Questions</u>												
1	0.22	0.72	0.89	0.17	0.42	0.92	0.08	0.92	0.75	0.42	0.83	0.00
2	0.42	0.53	0.69	0.25	0.33	0.58	0.50	0.50	0.58	0.50	0.75	0.92
3	0.44	0.47	0.64	0.42	0.42	0.67	0.42	0.50	0.58	0.50	0.50	0.67
4	0.36	0.36	0.44	0.17	0.25	0.25	0.42	0.33	0.42	0.50	0.50	0.67
5	0.28	0.22	0.44	0.08	0.08	0.25	0.25	0.25	0.50	0.50	0.33	0.58
6	0.33	0.36	0.47	0.17	0.25	0.33	0.25	0.42	0.50	0.58	0.42	0.58
7	0.33	0.31	0.44	0.17	0.17	0.42	0.42	0.42	0.50	0.42	0.33	0.42
8	0.44	0.44	0.61	0.25	0.25	0.50	0.42	0.42	0.58	0.67	0.67	0.75
9	0.42	0.42	0.58	0.25	0.25	0.50	0.42	0.42	0.58	0.58	0.58	0.67
10	0.28	0.31	0.47	0.17	0.17	0.42	0.42	0.42	0.58	0.25	0.33	0.42
11	0.39	0.39	0.53	0.17	0.25	0.42	0.42	0.42	0.58	0.58	0.50	0.58
12	0.44	0.39	0.50	0.50	0.50	0.67	0.58	0.50	0.30	0.25	0.17	0.33
13	0.14	0.14	0.25	0.17	0.17	0.33	0.08	0.17	0.17	0.17	0.25	0.25
14	0.53	0.53	0.78	0.42	0.42	0.75	0.42	0.50	0.75	0.75	0.67	0.83
<u>Opinion Questions</u>												
15	0.53	0.56	0.81	0.42	0.50	0.75	0.50	0.50	0.75	0.67	0.67	0.92
16	0.42	0.39	0.50	0.33	0.33	0.58	0.50	0.42	0.42	0.42	0.42	0.50
17	0.42	0.44	0.50	0.33	0.33	0.33	0.50	0.58	0.67	0.42	0.42	0.50
<u>Comparison Questions</u>												
18	0.53	0.58	0.81	0.58	0.76	0.92	0.33	0.42	0.67	0.67	0.67	0.83
19	0.39	0.47	0.56	0.50	0.58	0.75	0.42	0.42	0.50	0.25	0.42	0.42
20	0.33	0.31	0.50	0.33	0.25	0.58	0.33	0.25	0.42	0.33	0.42	0.50
<u>Continuing Questions</u>												
21	0.11	0.17	0.22	0.17	0.17	0.33	0.17	0.33	0.33	0.00	0.00	0.00
22	0.44	0.47	0.67	0.25	0.25	0.58	0.50	0.50	0.58	0.58	0.67	0.83

Note 1: A - The series The Guide to Success.
 B - The series To Whom the Cup.
 C - The series Our Students in the Field.
 Q-Nr. - Question number.

Note 2: The values indicated reflect positive response ratios in percentages; for the questions, see Appendix C.

Table 12. All Participants, First Questionnaire.

Q-Nr.	Overall			Mecca			Al-Madinah			Jeddah		
	A	B	C	A	B	C	A	B	C	A	B	C
<u>Reaction Questions</u>												
1	0.22	0.84	0.95	0.21	0.78	0.96	0.20	0.89	0.93	0.24	0.86	0.96
2	0.36	0.61	0.74	0.35	0.51	0.72	0.38	0.64	0.75	0.35	0.68	0.76
3	0.31	0.46	0.51	0.34	0.54	0.54	0.35	0.50	0.56	0.25	0.43	0.43
4	0.27	0.41	0.44	0.22	0.36	0.40	0.32	0.46	0.48	0.26	0.43	0.45
5	0.25	0.32	0.39	0.26	0.26	0.34	0.24	0.37	0.43	0.26	0.33	0.41
6	0.35	0.47	0.57	0.33	0.43	0.55	0.42	0.53	0.61	0.31	0.45	0.54
7	0.27	0.39	0.44	0.26	0.36	0.43	0.32	0.43	0.47	0.24	0.39	0.43
8	0.34	0.45	0.53	0.36	0.39	0.48	0.36	0.48	0.55	0.31	0.49	0.55
9	0.36	0.49	0.56	0.35	0.42	0.54	0.41	0.56	0.59	0.32	0.50	0.54
10	0.32	0.42	0.48	0.30	0.41	0.47	0.38	0.45	0.50	0.28	0.41	0.48
11	0.39	0.53	0.59	0.34	0.46	0.55	0.47	0.59	0.61	0.36	0.54	0.61
12	0.26	0.37	0.45	0.30	0.41	0.50	0.26	0.35	0.39	0.21	0.35	0.45
13	0.14	0.25	0.25	0.15	0.24	0.29	0.16	0.24	0.24	0.10	0.26	0.24
14	0.51	0.70	0.78	0.51	0.66	0.78	0.55	0.74	0.78	0.46	0.71	0.79
<u>Opinion Questions</u>												
15	0.43	0.64	0.77	0.41	0.62	0.79	0.49	0.66	0.76	0.39	0.65	0.75
16	0.49	0.67	0.73	0.50	0.68	0.78	0.55	0.67	0.72	0.41	0.66	0.70
17	0.36	0.47	0.51	0.37	0.46	0.49	0.44	0.56	0.59	0.26	0.39	0.44
<u>Comparison Questions</u>												
18	0.38	0.65	0.78	0.39	0.61	0.82	0.40	0.68	0.77	0.36	0.66	0.75
19	0.42	0.56	0.65	0.43	0.53	0.68	0.47	0.65	0.65	0.35	0.51	0.64
20	0.30	0.43	0.60	0.29	0.37	0.61	0.35	0.48	0.59	0.26	0.45	0.59
<u>Continuing Questions</u>												
21	0.16	0.21	0.23	0.17	0.24	0.21	0.17	0.18	0.24	0.14	0.21	0.24
22	0.36	0.61	0.67	0.36	0.53	0.61	0.41	0.66	0.70	0.31	0.64	0.69

Note 1: A - The series The Guide to Success.
 B - The series To Whom the Cup.
 C - The series Our Students in the Field.
 Q-Nr. - Question number.

Note 2: The values indicated reflect positive response ratios in percentages; for the questions, see Appendix C.

be improved if a single Saudi Arabian television channel could be dedicated to instructional purposes.

According to Table 6 the program "Our Students in the Field" received the highest positive response ratio (0.76, 0.82, 0.68) for question #2, concerning the degree to which the program helped students to understand their curriculum. This means that science students found this program more helpful than the others.

According to Table 7, question #16, which asked if the students wanted programs to explain the more difficult concepts, received a high positive response for the program "To Whom the Cup" (0.74, 0.84, 0.82) and for the program "Our Students in the Field" (0.82, 0.92, 0.80) from humanities students in all three districts

According to Table 8, when teachers of science were asked which programs should continue their presentations, the greatest positive re-sponse (question #16) was given to the program "Our Students in the Field" (0.83, 0.67, 0.83). This means that the teachers felt that their students should continue to watch this program.

Table 9 shows that the humanities teachers, when asked whether there was a conflict between watching educational TV and classroom studies (question #13), indicated by their low degree of positive response (0.11, 0.14, 0.17) that no conflict existed. The conclusion is that the teachers felt that students should continue to watch educational TV programming.

Table 10 reveals that when science administrators were asked (question #10) whether educational TV programs tended to discourage the practice of teachers privately tutoring students for a fee, the low positive response (0.33, 0.36, 0.44) indicated that this was not the case. The conclusion was that programs should be improved and developed in order to preclude the need for private tutoring.

According to Table 11, when humanities administrators were asked (question #12) if educational TV made a large impact upon students, the low degree of positive response (0.44, 0.39, 0.50) indicated that educational programming needs to be developed and improved in order to attract a larger audience.

According to question #1, Table 12, on whether the programs were watched, the highest ratios were given the program "Our Students in the Field" (0.96, 0.93, 0.96) in the three districts because the program explained the material and was easy to understand. This program also received the highest ratio of positive response in question #14, which asked the extent to which the program was a useful curricular review.

Part III: The 150 "Attitude" Questionnaire
Prior to Sorting

1) First, according to the total scores of the 200 students the top 50 scores, called the High Score Group (H), and the low 50 scores, called the Low Score Group (L), were selected.

2) For each item of the 150 questions, the mean was calculated for the H-Group and for the L-Group and their standard error. The difference between these two means and their standard error was also calculated, then "T" was calculated as defined below:

$$T = \frac{\bar{X}_h - \bar{X}_l}{S_e(\bar{X}_h - \bar{X}_l)}$$

Since the sample size is very large the Z-value can be used to calculate the significance difference between the means (Z-value is the standard normal distribution value).

3) The 150 questions were ranked according to their Z-value result and the highest 25 questions from the other table were selected; these questions were used in comparing attitudes in the next stage. The results of the rankings are in Table 13 and the highest ranked 25 questions are in Table 14.

Table 13. 150 Question "Attitude" Questionnaire.

Q-Nr.	Lowest Scores		Highest Scores		$X_h - X_l$	$S_e(X_h - X_l)$	Z
	X_l	S_l	X_h	S_h			
1	0.50	0.9082	2.54	1.5188	2.04	0.2213	9.2601
2	1.00	2.3265	3.04	1.9167	2.04	0.2913	7.0031
3	1.32	3.4873	3.66	1.9433	2.34	0.3296	7.0995
4	3.62	1.0567	3.48	1.7241	-0.14	0.2358	-0.5937
5	2.36	1.3371	3.16	1.5249	0.80	0.2392	3.3444
6	2.76	1.7800	3.56	1.6392	0.80	0.2615	3.0593
7	3.48	1.6424	3.66	1.4943	0.18	0.2505	0.7188
8	2.62	1.3833	2.62	1.7506	0.00	0.2504	0.0000
9	0.50	0.7857	2.90	1.6837	2.40	0.2222	10.8011
10	1.02	2.3465	2.38	1.6282	1.36	0.2818	4.8244
11	2.48	2.0100	2.24	1.1657	-0.24	0.2520	-0.9524
12	3.34	2.2290	4.34	1.0861	1.00	0.2575	3.8835
13	3.42	2.0853	4.46	0.4984	1.04	0.2273	4.5754
14	3.18	2.1914	3.96	0.8963	0.78	0.2485	3.1388
15	0.70	1.8061	2.88	1.7812	2.18	0.2679	8.1374
16	1.14	2.6946	3.36	1.7045	2.22	0.2966	7.4848
17	2.42	1.4220	3.18	1.8649	0.26	0.2564	1.0140
18	3.46	1.6004	4.04	0.9371	0.58	0.2253	2.5700
19	3.56	1.5984	4.16	1.4024	0.60	0.2450	2.4490
20	2.54	1.2739	3.10	1.1939	0.56	0.2222	2.5202
21	3.00	1.7143	3.05	1.1596	0.06	0.2397	0.2503
22	3.24	1.2882	3.76	0.7576	0.52	0.2023	2.5704
23	3.40	1.6327	4.06	0.8739	0.66	0.2239	2.9477
24	3.00	1.6327	3.36	1.8269	0.06	0.2630	0.2281
25	3.16	1.9331	3.40	1.7551	0.24	0.2716	0.8837
26	3.34	2.7167	4.20	1.1020	0.96	0.2764	3.4732
27	3.46	1.0698	3.98	0.6322	0.52	0.1845	2.8184
28	3.26	1.4616	3.72	1.8792	0.50	0.2485	1.9342
29	3.06	1.6494	3.84	1.1167	0.78	0.2352	3.3163
30	3.20	1.4286	3.86	1.0208	0.66	0.2213	2.9824
31	3.16	1.1576	3.44	1.1086	0.28	0.2129	1.3150
32	2.84	1.4024	2.98	1.9387	0.14	0.2505	0.5416
33	0.74	1.6249	3.16	1.5249	2.42	0.2510	9.6414
34	2.88	1.8629	2.86	1.6739	-0.02	0.2660	-0.0750
35	2.96	1.5902	3.74	1.4208	0.78	0.2454	3.1784
36	2.72	1.5228	3.90	0.9898	1.18	0.2237	5.2749
37	3.28	1.4302	3.90	1.1122	0.62	0.2255	2.7494
38	2.98	1.2037	3.16	1.0351	0.18	0.2116	0.8506
39	2.58	1.3506	3.64	1.3371	1.06	0.2318	4.5729
40	2.56	1.4759	2.92	1.8710	0.36	0.2587	1.3916

(continued)

Table 13 (continued). 150 Question "Attitude" Questionnaire.

Q-Nr.	Lowest Scores		Highest Scores		$X_h - X_l$	$S_e(X_h - X_l)$	Z
	X_l	S_l	X_h	S_h			
41	2.56	1.6392	3.80	1.0200	1.24	0.2306	5.3773
42	2.98	1.6935	3.72	0.8179	0.74	0.2241	3.3021
43	3.08	1.7894	3.84	0.9943	0.76	0.2359	3.2217
44	2.80	1.3872	3.32	1.6914	0.52	0.2482	2.0951
45	3.36	1.4873	3.72	0.8588	0.36	0.2166	1.6620
46	2.38	1.7092	3.22	1.6853	0.84	0.2606	3.2233
47	2.26	1.2167	3.02	1.2445	0.76	0.2219	3.4250
48	2.52	1.7649	3.48	1.3159	0.96	0.2482	3.8678
49	2.96	2.0372	3.84	0.9127	0.88	0.2430	3.6214
50	3.02	2.1016	3.72	1.0220	0.70	0.2500	2.8000
51	2.38	2.0771	2.64	1.6637	0.26	0.2835	0.9506
52	2.78	1.9710	2.84	1.7698	0.06	0.2735	0.2194
53	2.62	1.7506	2.94	1.4045	0.32	0.2512	1.2739
54	3.24	1.6963	4.10	0.7857	0.86	0.2228	3.8600
55	2.92	1.7486	3.92	1.1363	1.00	0.2402	4.1632
56	2.68	1.5690	3.12	1.2098	0.44	0.2357	1.8668
57	2.80	2.1224	3.86	1.3065	1.06	0.2619	4.0473
58	2.82	2.0690	3.56	1.5167	0.74	0.2678	2.7612
59	2.68	1.3241	3.52	0.7445	0.84	0.2034	4.1298
60	3.20	1.8776	4.12	0.8424	0.92	0.2332	3.9451
61	3.40	2.0408	4.36	0.7249	0.96	0.2352	4.0816
62	2.52	1.7649	3.84	0.7494	1.32	0.2242	5.8876
63	2.72	1.7159	2.94	1.6086	0.22	0.2579	0.8530
64	2.80	1.8776	3.80	0.9796	1.00	0.2390	4.1840
65	2.40	1.7959	3.76	0.6351	1.36	0.2205	6.1678
66	2.80	1.8367	3.90	0.7041	1.10	0.2254	4.8802
67	0.54	1.1514	2.22	1.8078	1.68	0.2433	6.0951
68	0.62	1.4649	2.46	1.7638	1.84	0.2541	7.2412
69	3.10	2.2146	3.76	1.2065	0.66	0.2616	2.5229
70	2.34	1.7800	3.20	1.2245	0.86	0.2451	3.5088
71	2.16	1.5657	3.50	1.4388	1.34	0.2451	5.4672
72	1.96	1.3045	2.40	1.5510	0.44	0.2390	1.8410
73	0.70	1.8469	2.48	1.4792	1.78	0.2579	6.9019
74	0.58	1.1465	3.34	1.4943	2.76	0.2298	12.0104
75	1.66	1.7392	2.46	1.3159	0.82	0.2472	3.3172
76	2.58	2.3710	3.68	0.7935	1.10	0.2516	4.3720
77	2.34	2.0249	2.72	1.2669	0.38	0.2567	1.4803
78	1.88	1.5363	2.60	1.3469	0.72	0.2401	2.9987
79	2.04	1.9576	2.46	1.8453	0.42	0.2758	1.5228
80	2.44	2.2106	3.86	0.8984	1.42	0.2494	5.6937

(continued)

Table 13 (continued). 150 Question "Attitude" Questionnaire.

Q-Nr.	Lowest Scores		Highest Scores		$X_h - X_l$	$S_e(X_h - X_l)$	Z
	X_l	S_l	X_h	S_h			
81	1.66	1.6984	2.32	1.7322	0.66	0.2643	2.4972
82	2.06	1.6086	1.66	1.0045	-0.40	0.2286	-1.7498
83	2.44	2.7412	1.72	1.2669	-0.72	0.2831	-2.5432
84	2.60	2.4082	1.82	0.9261	-0.78	0.2582	-3.0209
85	2.16	2.3004	3.82	1.2935	1.66	0.2681	6.2429
86	1.74	2.0739	3.06	1.8943	1.32	0.2817	4.6858
87	2.42	2.4935	3.84	0.8718	-1.42	0.2594	5.4742
88	2.58	2.7792	3.56	1.3535	0.98	0.2875	3.4087
89	0.46	0.7025	2.44	1.4759	1.98	0.2087	-9.4873
90	2.58	3.2282	4.08	0.7282	1.50	0.2813	5.3324
91	2.18	2.6812	3.52	1.1935	1.34	0.2784	4.8132
92	1.84	1.8106	3.54	1.1514	-1.70	0.2434	-6.9811
93	2.24	2.5943	3.56	1.0678	1.32	0.2706	4.8780
94	2.24	2.3902	3.64	1.1331	1.40	0.2655	5.2731
95	1.40	1.3469	2.92	1.7294	1.52	0.2505	6.0672
96	0.52	0.9894	2.24	1.4514	1.72	0.2209	7.7863
97	2.42	2.9833	3.88	0.8424	1.46	0.2766	5.2784
98	2.26	2.4414	3.74	1.0943	1.48	0.2659	5.5660
99	2.12	1.3118	3.18	1.7833	1.06	0.2861	3.7037
100	2.42	2.2894	3.64	1.7453	1.22	0.2841	4.2943
101	0.48	0.7445	2.26	1.6249	1.78	0.2177	8.1764
102	0.84	2.2188	3.66	1.2086	2.82	0.2618	10.7716
103	0.62	1.3424	2.90	1.6020	2.28	0.2427	9.3940
104	2.54	1.9678	2.48	1.8873	-0.06	0.2771	-0.2160
105	2.58	2.3740	3.48	2.2955	0.90	0.3055	2.9460
106	1.24	3.0240	2.84	1.4841	1.60	0.2995	5.3422
107	1.00	2.9796	3.40	1.6327	2.40	0.3037	7.9025
108	2.68	2.3445	3.22	1.8078	0.54	0.2882	1.8736
109	2.76	2.8392	3.88	1.5363	1.12	0.2958	3.7863
110	3.06	2.6700	3.60	1.6326	0.54	0.2933	1.8411
111	1.78	2.6527	3.48	1.9690	1.70	0.2836	5.9944
112	3.12	2.4751	3.68	1.5690	0.56	0.2844	1.9691
113	2.38	3.0976	3.96	1.1820	1.58	0.2926	5.3999
114	2.18	2.1506	2.90	2.0918	0.72	0.2913	2.4717
115	2.30	3.1127	3.84	1.3208	1.54	0.2978	5.1713
116	2.12	3.0057	3.06	1.4045	0.94	0.2970	3.1650
117	1.58	1.8404	2.58	2.3302	1.00	0.2888	3.4626
118	2.16	2.3004	3.32	1.8139	1.16	0.2869	4.0433
119	2.08	2.7282	3.56	1.3943	1.48	0.2871	5.1550
120	1.10	2.7041	2.56	2.0473	1.46	0.3086	4.7356

(continued)

Table 13 (continued). 150 Question "Attitude" Questionnaire.

Q-Nr.	Lowest Scores		Highest Scores		$X_h - X_l$	$S_e(X_h - X_l)$	Z
	X_l	S_l	X_h	S_h			
121	0.58	1.4731	1.86	3.2657	1.28	0.3079	4.1572
122	2.56	3.5670	3.90	1.1939	1.34	0.3069	4.3662
123	1.82	2.1914	3.62	1.4241	1.80	0.2689	6.6939
124	2.82	2.5996	3.94	0.7922	1.12	0.2604	4.3011
125	2.62	2.1588	3.70	1.1531	1.08	0.2574	4.1958
126	2.80	2.6531	4.40	0.8147	1.24	0.2634	4.7077
127	2.48	2.2955	3.42	1.3098	0.94	0.2685	3.5009
128	2.50	2.5816	3.44	1.0269	0.94	0.2686	3.4996
129	2.68	2.7935	3.42	0.9425	0.74	0.2733	2.7076
130	0.50	1.0360	2.22	1.3588	1.72	0.2186	7.8683
131	2.62	2.6078	3.44	1.2310	0.82	0.2771	2.9592
132	0.64	1.6229	2.66	1.5351	2.02	0.2513	8.0383
133	2.16	2.1780	2.70	1.4796	0.54	0.2705	1.9963
134	2.26	1.7882	2.74	1.2984	0.48	0.2485	1.9316
135	1.88	1.6996	2.14	1.1841	0.26	0.2402	1.0824
136	1.96	1.7953	2.42	1.8812	0.46	0.2711	1.6968
137	1.78	2.2159	2.54	1.6820	0.76	0.2792	2.7221
138	1.86	1.5106	2.30	1.1122	0.44	0.2290	1.9214
139	1.76	1.8596	1.12	1.5771	0.36	0.2621	1.3735
140	0.50	0.9082	2.40	1.5510	1.90	0.2218	8.5663
141	1.66	1.5351	2.36	2.1127	0.70	0.2701	2.5916
142	1.76	1.5739	2.56	2.0470	0.80	0.2691	2.9729
143	1.82	1.8241	2.36	1.4188	0.54	0.2547	2.1201
144	1.82	2.0690	2.30	1.9285	0.48	0.2828	1.6973
145	2.52	2.5404	3.66	1.3718	1.14	0.2797	4.0758
146	2.80	2.5306	3.86	0.9392	1.06	0.2634	4.0243
147	2.20	2.1633	3.24	1.4106	1.04	0.2674	3.8893
148	0.62	1.3200	2.84	1.4024	2.22	0.2290	9.6943
149	3.08	3.0139	4.08	0.5649	1.00	0.2675	3.7383
150	0.64	1.4188	2.66	1.5351	2.02	0.2431	8.3093

Table 14. 25 Questions with Highest Score.

Q-Nr.	<u>Lowest Scores</u>		<u>Highest Scores</u>		$X_h - X_l$	$S_e(X_h - X_l)$	Z
	X_l	S_l	X_h	S_h			
1	0.58	1.1465	3.34	1.4943	2.76	0.2298	12.0104
2	0.50	0.7857	2.90	1.6837	2.40	0.2222	10.8011
3	0.84	2.2188	3.66	1.2086	2.82	0.2618	10.7716
4	0.62	1.3200	2.84	1.4024	2.22	0.2290	9.6943
5	0.74	1.6249	3.16	1.5249	2.42	0.2510	9.6414
6	0.46	0.7025	2.44	1.4759	1.98	0.2087	-9.4873
7	0.62	1.3424	2.90	1.6020	2.28	0.2427	9.3940
8	0.50	0.9082	2.54	1.5188	2.04	0.2213	9.2601
9	0.50	0.9082	2.40	1.5510	1.90	0.2218	8.5663
10	0.64	1.4188	2.66	1.5351	2.02	0.2431	8.3093
11	0.48	0.7445	2.26	1.6249	1.78	0.2177	8.1764
12	0.70	1.8061	2.88	1.7812	2.18	0.2679	8.1374
13	0.64	1.6229	2.66	1.5351	2.02	0.2513	8.0383
14	1.00	2.9796	3.40	1.6327	2.40	0.3037	7.9025
15	0.50	1.0360	2.22	1.3588	1.72	0.2186	7.8683
16	0.52	0.9894	2.24	1.4514	1.72	0.2209	7.7863
17	1.14	2.6946	3.36	1.7045	2.22	0.2966	7.4848
18	0.62	1.4649	2.46	1.7638	1.84	0.2541	7.2412
19	1.32	3.4873	3.66	1.9433	2.34	0.3296	7.0995
20	1.00	2.3265	3.04	1.9167	2.04	0.2913	7.0031
21	1.84	1.8106	3.54	1.1514	-1.70	0.2434	-6.9811
22	0.54	1.1514	2.22	1.8078	1.68	0.2433	6.0951
23	0.70	1.8469	2.48	1.4792	1.78	0.2579	6.9019
24	1.82	2.1914	3.62	1.4241	1.80	0.2689	6.6939
25	2.16	2.3004	3.82	1.2935	1.66	0.2681	6.2429

Part IV: The "Attitude Questionnaire"

After Sorting--25 Highest Scores

Students

Table 15 indicates that the P-value of districts is .008, which is greater than .05, meaning that the F-test is significant. This means that the null hypothesis was rejected and that there is no significant difference in the attitude toward educational TV between different districts.

To see this in minute detail the LSD was used. By using the LSD, further analysis was made to detect which district caused the differences. Table 16 presents the LSD result.

Additionally, Table 15 indicates that Hypothesis H_2 cannot be rejected since the P-value is .538.

Table 15. ANOVA Table for Dependent Variable (4) with Label: Score.

<u>Source</u>	<u>DF</u>	<u>Sum-Squares</u>	<u>Mean-Squares</u>	<u>F-Ratio</u>	<u>Prob > F</u>
A	2	605.0058	302.5029	4.9	.008
B	1	48.80296	48.80296	.79	.538
AB	2	98.84695	49.42347	.8	.505
Error	294				
Means		18165.38	61.78701		
<u>Overall Mean</u>					
<u>Count</u>			<u>Mean</u>		
300			75.44333		
<u>One-Way Means--Results A</u>			<u>Two-Way Means--Results AB</u>		
<u>Level(s)</u>	<u>Count</u>	<u>Mean</u>	<u>Level(s)</u>	<u>Count</u>	<u>Mean</u>
A1	100	73.59	A1 + Sci	48	73.46
A2	100	77.03999	A1 + Hum	48	73.72
A3	100	75.7	A2 + Sci	48	78.24
<u>One-Way Means--Results B</u>			A2 + Hum	48	75.84
Sci	148	75.84666	A3 + Sci	48	75.84
Hum	148	75.04	A3 + Hum	48	75.56
Notes: 1) Sum of count in each table is the same and equal to the count of ANOVA.					
2) ANOVA mean is equal to the sum of means in each table divided by the number of the corresponding levels.					
3) A = District (1: Mecca; 2: Al-Madinah; 3: Jeddah) and B = Fields of Study.					

Table 16. Differences Between District Means.

	<u>1</u>	<u>2</u>	<u>3</u>
1	--		
2	3.4005	--	
3	2.110011	1.340004	--

The difference between the means in district 1 and district 2 is significant.

Teachers

Table 17 indicates that Hypothesis H_3 cannot be rejected since the P-value is .501 and that Hypothesis H_4 cannot be rejected since the P-value is .291.

Table 17. ANOVA Table for Dependent Variable (4) with Label: Score.

<u>Source</u>	<u>DF</u>	<u>Sum-Squares</u>	<u>Mean-Squares</u>	<u>F-Ratio</u>	<u>Prob > F</u>
A	2	75.44491	37.72245	.66	.501
B	1	64.22199	64.22199	1.13	.291
AB	2	240.4445	120.2223	2.12	.126
Error	66				
Means		3747	56.77273		
<u>Overall Mean Count</u>			<u>Mean</u>		
72			74.61112		

One-Way Means--Results A

<u>Level(s)</u>	<u>Count</u>	<u>Mean</u>
A1	24	73.41666
A2	24	74.5
A3	24	75.91667

One-Way Means--Results B

	<u>Count</u>	<u>Mean</u>
Sci	36	75.55556
Hum	36	73.6667

Two-Way Means--Results AB

<u>Level(s)</u>	<u>Count</u>	<u>Mean</u>
A1 + Sci	12	76.91666
A1 + Hum	12	69.91666
A2 + Sci	12	74.5
A2 + Hum	12	74.5
A3 + Sci	12	75.25
A3 + Hum	12	76.58334

- Notes: 1) Sum of count in each table is the same and equal to the count of ANOVA.
2) ANOVA mean is equal to the sum of means in each table divided by the number of the corresponding levels.
3) A = District (1: Mecca; 2: Al-Madinah; 3: Jeddah) and B = Fields of Study.

Administrators

Table 18 indicates that Hypothesis H_5 cannot be rejected since the P-value is .512 and that Hypothesis H_6 cannot be rejected since the P-value is .509

Table 18. ANOVA Table for Dependent Variable (4) with Label: Score.

<u>Source</u>	<u>DF</u>	<u>Sum-Squares</u>	<u>Mean-Squares</u>	<u>F-Ratio</u>	<u>Prob > F</u>
A	2	201	100.5	.86	.512
B	1	72	72	.62	.509
AB	2	117	58.5	.5	.533
Error	66				
Means		7706	116.7576		
<u>Overall Mean Count</u>			<u>Mean</u>		
72			73.83333		

<u>One-Way Means--Results A</u>			<u>Two-Way Means--Results AB</u>		
<u>Level(s)</u>	<u>Count</u>	<u>Mean</u>	<u>Level(s)</u>	<u>Count</u>	<u>Mean</u>
A1	24	72.08334	A1 + Sci	12	72.58334
A2	24	76.08334	A1 + Hum	12	71.58334
A3	24	73.33334	A2 + Sci	12	78.83334
			A2 + Hum	12	73.33334
			A3 + Sci	12	73.08334
			A3 + Hum	12	73.58334

- Notes: 1) Sum of count in each table is the same and equal to the count of ANOVA.
 2) ANOVA mean is equal to the sum of means in each table divided by the number of the corresponding levels.
 3) A = District (1: Mecca; 2: Al-Madinah; 3: Jeddah) and B = Fields of Study.

Staff

Table 19 indicates that Hypothesis H_7 cannot be rejected since the P-value is .536.

Table 19. ANOVA Table for Dependent Variable (4) with Label: Score.

<u>Source</u>	<u>DF</u>	<u>Sum-Squares</u>	<u>Mean-Squares</u>	<u>F-Ratio</u>	<u>Prob > F</u>
A	2	166.722	83.36098	.98	.536
B	1	136.1109	136.1109	1.59	.206
AB	2	156.7226	78.36128	.92	.523
Error	138				
Means		11785.33	85.40096		
<u>Overall Mean</u>					
<u>Count</u>			<u>Mean</u>		
144			74.22222		

<u>One-Way Means--Results A</u>			<u>Two-Way Means--Results AB</u>		
<u>Level(s)</u>	<u>Count</u>	<u>Mean</u>	<u>Level(s)</u>	<u>Count</u>	<u>Mean</u>
A1	48	72.75	A1 + Sci	24	74.75
A2	48	75.29166	A1 + Hum	24	70.75
A3	48	74.625	A2 + Sci	24	76.6666
			A2 + Hum	24	73.91666
			A3 + Sci	24	74.16666
			A3 + Hum	24	75.08334

- Notes: 1) Sum of count in each table is the same and equal to the count of ANOVA.
 2) ANOVA mean is equal to the sum of means in each table divided by the number of the corresponding levels.
 3) A = District (1: Mecca; 2: Al-Madinah; 3: Jeddah) and B = Fields of Study.

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CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Saudi Arabia pays great attention to education. Generous funds are allotted and every possible effort is made to educate all Saudi citizens. In this context the Saudi Arabian government has opened schools at appropriate levels of study for both males and females. These schools accommodate students' needs from an early age until they obtain the general secondary education certificate, entitling them to admission into a university to obtain undergraduate and postgraduate degrees in different fields.

Saudi Arabia tries to achieve a high degree of modern education by assuring full coordination between the Ministry of Information and the Ministry of Education in order to present the most recent techniques of educational TV. Learning through television has been one of the most important steps taken in recent years.

Conclusions

Several conclusions were drawn on the basis of the findings of this study. A summary of the ANOVA determination of the acceptance or rejection of the null hypotheses at the .05 level of significance follows:

- H_1 rejected: There is no significant difference in attitude toward educational television between male, secondary students in the three districts of Saudi Arabia (Mecca, Al-Madinah, and Jeddah).
- H_2 accepted: There is no significant difference in attitude toward educational television between male, secondary students in the two fields of science and humanities.
- H_3 accepted: There is no significant difference in attitude toward educational television between secondary school teachers in the three districts of Mecca, Al-Madinah, and Jeddah.
- H_4 accepted. There is no significant difference in attitude toward educational television between secondary school teachers in the two fields of science and humanities.
- H_5 accepted. There is no significant difference in attitude toward educational television between

secondary school administrators in the three districts of Mecca, Al-Madinah, and Jeddah.

H₆ accepted: There is no significant difference in attitude toward educational television between secondary school administrators in the two fields of science and humanities.

H₇ accepted: There is no significant difference in attitude toward educational television between secondary school teachers and administrators (staff).

One of seven null hypotheses was rejected. A significant difference was found in attitudes toward educational TV between male, secondary school students in the three districts. One reason postulated for this difference was that Mecca and Al-Madinah are the Holy Cities of Islam, and people in the two cities tend to be more conservative and devoted to maintaining traditional Islamic values and customs. On the other hand, Jeddah is a commercially oriented city which has been subjected to a variety of western influences.

Based on the results of this study it was concluded that students in Saudi Arabia have been attracted to studying through educational TV and that they look forward to the presentation of additional educational programs on Saudi TV. They are also in favor of the establishment of an additional TV channel dedicated to presentation of educational TV programming. Additionally, it was concluded that the quality

of current Saudi educational TV programming was below acceptable standards and that the current percentage (25%) of Saudi television programs devoted to religious and educational programming is inadequate (Cf. KSA, Ministry of Information, Saudi Arabian Television, 1982). Finally, science students would like to see additional programming related to the curriculum in their fields, specifically programming related to the kinds of problems they encounter and which involves the display of laboratory techniques and experimentation. These conclusions were established by the results of the first questionnaire, which surveyed reactions to and opinions of educational television by students at King Abdulaziz University.

Recommendations

- 1) Educational TV programming should be closely integrated with educational curriculum areas such as social studies and the sciences.
- 2) Educational TV will succeed to the degree it relates to the types of problems students encounter and solves them.
- 3) Saudi television should devote more time to educational programming, including the creation of new and different types of programs.
- 4) A new TV channel dedicated to educational programming should be established.
- 5) A close relationship should be maintained between the Directory of Educational TV in the Ministry of Informa-

tion and other educational directors in school and universities in order to coordinate educational TV programming.

6) The average score of the attitude test was high, indicating substantial use of current educational TV facilities. This indicates the need for an additional channel, which should be established since financial considerations are not a bar to expansion of current facilities.

7) Educational TV should function as an open and free university to present a broad spectrum of knowledge, such as is done on the ABC network in Great Britain and on PBS in the U.S.

8) Educational TV should be directed by specialist educators with sound experience in the fields of education.

9) Educational TV should expand the use of competitive programming to attract a wide audience.

10) Educational TV should present material attractive to people of all ages and areas of Saudi society, both male and female.

11) Educational TV should be comprehensive in its effort to cover all fields of knowledge and culture.

12) Educational TV programming should not be seasonal, but should be shown during the entire calendar year.

Suggestions for Further Study

1) Additional research is recommended to discover the attitudes of students in other provinces of Saudi Arabia

since this study covers only the Western Province of Saudi Arabia.

2) Additional research is recommended to discover the reactions of females in Saudi Arabia to educational TV.

3) Additional research is recommended to discover the attitudes of different age groups, of different nationalities and professions to educational TV.

4) Additional research is recommended to discover the attitudes of people in other educational stages (kindergarten, elementary, intermediate, technical education, adult education, special education [the handicapped], and higher education) to educational TV.

5) Additional research is recommended to discover the attitudes of the staff working in educational TV to the work they produce or program.

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Appendix

APPENDIX A**Educational Statistics, Kingdom of Saudi Arabia**

Table Al. Development of General Education for All Students, Kingdom of Saudi Arabia

Year	Nr. Of Schools	Number Of Full-Time Teachers	Number of Students, in Thousands									Other	Total
			1	2	3	4	5	6	7	8	9		
1969-70	3,107	23,118	4	397	61	16	7	2	11	1	43	5	547
1970-71	3,283	23,856	6	428	70	20	8	2	14	1	43	5	597
1971-72	3,659	27,627	7	475	84	23	9	2	15	1	46	7	669
1972-73	4,254	31,907	8	521	100	27	11	2	14	1	55	9	748
1973-74	4,697	37,942	10	578	116	33	15	3	14	2	72	10	853
1974-75	5,634	43,777	14	634	137	42	19	5	15	3	100	14	983
1975-76	6,536	51,176	16	686	155	49	26	8	15	4	95	12	1,066
1976-77	7,497	58,201	16	726	178	60	32	8	15	5	99	12	1,151
1977-78	8,695	63,557	18	753	197	70	41	9	20	6	106	9	1,229
1978-79	10,018	70,468	23	803	220	84	44	10	21	6	122	7	1,340
1979-80	11,379	86,007	28	930	245	93	48	10	22	7	142	9	1,463
1980-81	11,379	76,007	28	930	257	100	56	12	21	8	136	15	1,563
1981-82	12,574	84,213	36	998	274	116	63	18	20	9	146	11	1,691

Notes (in the case of higher education, faculties are counted as schools):

- | | | |
|-------------------------|--------------------------|----------------------------|
| 1 - Preschool | 2 - Elementary education | 3 - Intermediate education |
| 4 - Secondary education | 5 - Higher education | 6 - Training abroad |
| 7 - Teacher training | 8 - Technical education | 9 - Adult education |

Source: Kingdom of Saudi Arabia, Ministry of Planning, Saudi Arabia, Achievements of Development Plans 1390-1402 (1970-1982). Facts and Figures.

Table A2. Education for Males, Kingdom of Saudi Arabia

Year	Nr. Of Schools	Number Of Full-Time Teachers	Number of Students, in Thousands										Other	Total
			1	2	3	4	5	6	7	8	9			
1969-70	2,654	18,172	3	277	56	14	7	2	4	1	43	5	412	
1970-71	2,810	18,047	4	296	61	18	8	2	7	1	43	5	445	
1971-72	3,029	20,649	4	321	71	20	8	2	8	1	46	7	488	
1972-73	3,449	23,422	5	347	79	23	10	2	8	1	53	9	537	
1973-74	3,772	27,772	6	380	86	27	13	3	9	2	62	10	598	
1974-75	4,195	31,602	8	411	99	32	16	4	11	3	75	13	672	
1975-76	4,832	36,311	9	439	107	35	21	7	11	4	68	11	712	
1976-77	5,450	40,685	9	460	122	42	25	7	10	5	69	11	760	
1977-78	6,404	43,655	10	475	133	50	32	8	10	5	75	8	806	
1978-79	7,228	46,773	13	504	149	59	33	9	10	5	86	5	873	
1979-80	7,850	50,189	14	537	165	64	35	9	10	6	103	8	951	
1980-81	7,739	53,996	16	570	169	66	40	11	10	7	89	13	991	
1981-82	7,980	56,204	20	601	177	74	43	17	11	8	91	10	1,052	

Notes (in the case of higher education, faculties are counted as schools):

- | | | |
|-------------------------|--------------------------|----------------------------|
| 1 - Preschool | 2 - Elementary education | 3 - Intermediate education |
| 4 - Secondary education | 5 - Higher education | 6 - Training abroad |
| 7 - Teacher training | 8 - Technical education | 9 - Adult education |

Source: Kingdom of Saudi Arabia, Ministry of Planning, Saudi Arabia, Achievements of Development Plans 1390-1402 (1970-1982). Facts and Figures.

Table A3. Education for Females, Kingdom of Saudi Arabia

Year	Nr. Of Schools	Number Of Full-Time Teachers	Number of Students, in Thousands										Other	Total
			1	2	3	4	5	6	7	8	9			
1969-70	453	4,946	1	120	5	2	-	-	7	-	-	-	-	135
1970-71	473	5,809	2	132	9	2	-	-	7	-	-	-	-	152
1971-72	630	6,978	3	154	13	3	1	-	7	-	-	-	-	181
1972-73	805	8,485	3	174	21	4	1	-	6	-	-	2	-	211
1973-74	975	10,220	4	198	30	6	2	-	5	-	10	1	-	255
1974-75	1,439	12,715	6	223	38	10	3	1	4	-	25	1	-	311
1975-76	1,704	14,865	7	247	48	14	5	1	4	-	27	1	-	354
1976-77	2,047	17,516	7	266	56	18	7	1	5	-	30	1	-	391
1977-78	2,291	19,902	8	278	64	20	9	1	10	1	31	1	-	423
1978-79	2,790	23,695	10	299	71	25	11	1	11	1	36	1	-	466
1979-80	3,220	28,120	10	325	80	29	13	1	12	1	39	1	-	511
1980-81	3,640	32,081	12	360	88	34	16	1	11	1	47	2	-	572
1981-82	4,594	38,009	16	397	97	42	20	1	9	1	55	1	-	639

Notes (in the case of higher education, faculties are counted as schools):

- | | | |
|-------------------------|--------------------------|----------------------------|
| 1 - Preschool | 2 - Elementary education | 3 - Intermediate education |
| 4 - Secondary education | 5 - Higher education | 6 - Training abroad |
| 7 - Teacher training | 8 - Technical education | 9 - Adult education |

Source: Kingdom of Saudi Arabia, Ministry of Planning, Saudi Arabia, Achievements of Development Plans 1390-1402 (1970-1982). Facts and Figures.

Table A4. Annual Growth Rates in Development of Education, All Students, Kingdom of Saudi Arabia (in percentage)

Year	Nr. Of Schools	Number Of Full-Time Teachers	Number of Students									Total	
			1	2	3	4	5	6	7	8	9		Other
1970-71	5.7	3.2	50.0	7.8	14.8	25.0	14.3	0.0	27.3	0.0	0.0	0.0	9.1
1971-72	11.5	15.8	16.7	11.0	20.0	15.0	12.5	0.0	7.1	0.0	7.0	40.0	12.1
1972-73	16.3	15.5	14.3	9.7	19.0	17.4	22.2	0.0	-6.7	0.0	19.6	28.6	11.8
1973-74	10.4	18.9	25.0	10.9	16.0	22.2	36.4	50.0	0.0	100.0	30.9	11.1	14.0
1974-75	19.9	15.4	40.0	9.7	18.1	27.3	26.7	66.7	7.1	50.0	38.9	40.0	15.2
1975-76	16.0	16.9	14.2	8.2	13.1	16.7	36.8	60.0	0.0	33.3	-5.0	-14.3	8.4
1976-77	14.7	13.7	0.0	5.8	14.8	22.4	23.1	0.0	0.0	25.0	4.2	0.0	8.0
1977-78	16.0	9.2	12.5	3.7	10.7	16.7	28.1	12.5	33.3	20.0	7.1	-25.0	6.8
1978-79	15.2	10.9	27.8	6.6	11.7	20.0	7.3	11.1	5.0	0.0	15.1	-33.3	9.0
1979-80	10.5	11.1	4.3	7.3	11.4	10.7	9.1	0.0	4.8	16.7	16.4	50.0	9.2
1980-81	2.8	9.8	16.7	7.9	4.9	7.5	16.7	20.0	-4.6	14.3	-4.2	66.7	6.9
1981-82	10.5	9.5	28.6	7.3	6.6	16.0	12.5	50.0	-4.8	12.5	7.3	-26.7	8.2
Average	13.5	13.3	18.1	7.9	13.8	18.4	22.1	21.9	5.1	23.2	12.1	6.1	10.0

Notes (in the case of higher education, faculties are counted as schools):

- | | | |
|-------------------------|--------------------------|----------------------------|
| 1 - Preschool | 2 - Elementary education | 3 - Intermediate education |
| 4 - Secondary education | 5 - Higher education | 6 - Training abroad |
| 7 - Teacher training | 8 - Technical education | 9 - Adult education |

Source: Kingdom of Saudi Arabia, Ministry of Planning, Saudi Arabia, Achievements of Development Plans 1390-1402 (1970-1982). Facts and Figures.

Table A5. Annual Growth Rates in Development of Education, Male Students, Kingdom of Saudi Arabia (in percentage)

Year	Nr. Of Schools	Number Of Full-Time Teachers	Number of Students										Total
			1	2	3	4	5	6	7	8	9	Other	
1970-71	5.9	-0.7	33.3	6.7	8.9	28.6	14.3	0.0	75.0	0.0	0.0	0.0	8.1
1971-72	7.8	14.4	0.0	8.5	16.4	11.1	0.0	0.0	14.3	6.0	7.0	40.0	9.7
1972-73	13.9	13.4	25.0	8.1	11.3	15.0	25.0	0.0	0.0	0.0	15.2	28.6	10.0
1973-74	7.9	18.4	20.0	9.5	8.9	17.4	30.0	50.0	12.5	100.0	17.0	11.1	11.4
1974-75	12.7	14.0	33.3	8.2	15.1	18.5	23.1	33.3	22.2	50.0	21.0	30.0	12.4
1975-76	15.2	14.9	12.5	6.8	8.1	9.4	31.3	75.0	0.0	33.3	-9.7	-15.4	6.0
1976-77	12.8	12.1	0.0	4.8	14.0	20.0	19.1	0.0	-9.1	25.0	1.5	0.0	6.7
1977-78	17.5	7.3	11.1	3.3	9.0	19.1	28.0	14.3	0.0	0.0	8.7	-28.2	6.1
1978-79	12.9	7.1	30.0	6.1	12.0	18.0	3.1	12.5	0.0	0.0	14.7	-37.5	8.3
1979-80	8.6	7.3	7.7	6.6	10.7	8.5	6.1	0.0	0.0	20.0	19.8	60.0	8.9
1980-81	-1.4	7.6	14.3	6.2	2.4	3.1	14.3	22.2	0.0	16.7	-13.6	62.5	4.2
1981-82	3.1	4.1	25.0	5.4	4.7	12.1	7.5	54.6	10.0	14.3	2.3	-23.1	6.2
Average	11.0	11.0	16.2	6.6	10.6	15.0	18.4	20.8	5.4	22.2	7.5	4.0	8.3

Notes (in the case of higher education, faculties are counted as schools):

- | | | |
|-------------------------|--------------------------|----------------------------|
| 1 - Preschool | 2 - Elementary education | 3 - Intermediate education |
| 4 - Secondary education | 5 - Higher education | 6 - Training abroad |
| 7 - Teacher training | 8 - Technical education | 9 - Adult education |

Source: Kingdom of Saudi Arabia, Ministry of Planning, Saudi Arabia, Achievements of Development Plans 1390-1402 (1970-1982). Facts and Figures.

Table A6. Annual Growth Rates in Development of Education, Female Students, Kingdom of Saudi Arabia (in percentage)

Year	Nr. Of Schools	Number Of Full-Time Teachers	Number of Students									Total	
			1	2	3	4	5	6	7	8	9		Other
1970-71	4.4	17.5	100.0	10.0	80.0	0.0	-	-	0.0	-	-	-	12.6
1971-72	33.2	20.1	50.0	16.7	44.4	50.0	-	-	0.0	-	-	-	19.1
1972-73	27.8	21.6	0.0	13.0	61.5	33.4	0.0	-	-14.3	-	-	-	16.6
1973-74	21.1	20.5	33.4	13.8	42.9	50.0	100.0	-	-16.7	-	400.0	-	20.9
1974-75	47.6	19.1	50.0	12.1	26.7	66.7	50.0	-	-20.0	-	150.0	-	22.0
1975-76	18.4	22.1	16.7	11.3	26.3	40.0	66.7	0.0	0.0	-	8.0	0.0	13.8
1976-77	20.1	17.8	0.0	7.7	16.7	28.6	40.0	0.0	25.0	-	11.1	0.0	10.5
1977-78	11.9	13.6	14.3	4.5	14.3	11.1	28.6	0.0	100.0	-	3.3	0.0	8.2
1978-79	21.8	19.1	25.0	7.6	10.9	25.0	22.2	0.0	10.0	0.0	16.1	0.0	10.2
1979-80	15.4	18.7	0.0	8.7	12.7	16.0	18.2	0.0	9.1	0.0	8.3	0.0	9.7
1980-81	-18.0	14.1	20.0	10.8	10.0	17.3	23.1	0.0	-8.3	0.0	20.5	100.0	11.9
1981-82	74.0	18.5	33.4	10.3	10.2	23.5	25.0	0.0	-18.2	0.0	17.0	-50.0	11.7
Average	22.2	18.7	21.6	10.2	25.0	31.6	-	-	5.3	-	-	-	13.9

Notes (in the case of higher education, faculties are counted as schools):

- | | | |
|-------------------------|--------------------------|----------------------------|
| 1 - Preschool | 2 - Elementary education | 3 - Intermediate education |
| 4 - Secondary education | 5 - Higher education | 6 - Training abroad |
| 7 - Teacher training | 8 - Technical education | 9 - Adult education |

Source: Kingdom of Saudi Arabia, Ministry of Planning, Saudi Arabia, Achievements of Development Plans 1390-1402 (1970-1982). Facts and Figures.

Table A7. Saudi Students Studying at Universities Abroad by Degree Level (1975)

Assigned Students	Educational Level				Percent Distribution
	BS, BA	MS, MA	Ph.D	Total	
Ministry of Defense	400	11	6	417	26.7
University of Riyadh	11	86	242	339	21.7
King Abdulaziz University	2	7	189	198	12.7
Ministry of Communications	148	2	-	150	9.6
Ministry of Education	47	82	3	132	8.5
Ministry of the Interior	64	9	3	76	4.9
University of Petroleum and Minerals	4	16	47	67	4.3
Ministry of Health	42	8	9	59	3.8
Ministry of Information	37	3	-	40	2.6
Ministry of Agriculture	-	12	2	14	0.9
Ministry of Finance	-	9	4	13	0.8
Ministry of Petroleum	3	5	4	12	0.8
Ministry of Labor and Social Affairs	-	5	2	7	0.4
Ministry of Commerce and Industry	2	3	-	5	0.3
Other government agencies	12	17	4	33	2.1
Total Assigned Grantees	772	275	515	1,562	100.0
Unassigned Grantees	831	87	66	984	
TOTAL ALL GRANTEES	1,603	362	581	2,546	
Percentage Distribution	63.0	14.2	22.8	100.0	

Source: Khalid, Hafiz Talal, The potential role of educational/instructional television in higher education and human resources. Development for the Kingdom of Saudi Arabia. Unpublished doctoral dissertation, University of Colorado, Boulder, Colorado, 1985.

Table A8. Technical Education, Kingdom of Saudi Arabia

	1971- 1972	1972- 1973	1973- 1974	1974- 1975	1975- 1976	1976- 1977	1977- 1978	1978- 1979	1979- 1980	1980- 1981	1981- 1982	Total
<u>Commercial-2ndary</u>												
No. Schools	3	3	3	8	11	11	14	15	16	16	16	16
Enrollment	134	321	584	1,170	1,643	2,306	2,981	3,516	4,288	4,468	4,936	26,374
Graduates	-	-	113	338	286	380	818	859	1,014	1,074	1,206	6,088
<u>Commercial-Higher</u>												
No. Schools	-	-	-	-	1	2	3	4	4	4	4	4
Enrollment	-	-	-	-	19	95	229	247	264	292	229	1,375
Graduates	-	-	-	-	-	16	45	75	63	78	78	355
<u>Industrial-2ndary</u>												
No. Schools	4	4	4	4	8	8	8	8	8	8	8	8
Enrollment	765	1,035	1,596	2,238	2,401	2,147	1,621	1,291	1,350	1,914	2,654	19,012
Graduates	152	187	226	345	634	687	627	391	266	321	363	4,199
<u>Industrial-Higher</u>												
No. Schools	-	1	1	1	1	1	2	2	2	1	1	1
Enrollment	-	58	119	105	108	106	147	146	137	95	91	1,112
Graduates	-	-	-	53	50	10	52	47	61	42	21	336
<u>Agriculture-2ndary</u>												
No. Schools	-	-	-	-	-	-	1	1	1	1	1	1
Enrollment	-	-	-	-	-	-	136	265	322	246	190	1,159
Graduates	-	-	-	-	-	-	-	-	118	95	67	280

Source: Kingdom of Saudi Arabia, Ministry of Planning, Saudi Arabia. Achievements of the Development Plans 1390-1402 (1970-1982). Facts and Figures.

Table A9. Vocational Education, Kingdom of Saudi Arabia

	1970- 1971	1971- 1972	1972- 1973	1973- 1974	1974- 1975	1975- 1976	1976- 1977	1977- 1978	1978- 1979	1979- 1980	1980- 1981	1981- 1982	Total
<u>Pre-Vocational</u>													
No. Centers	-	-	-	-	3	3	3	3	6	6	6	6	6
Enrollment	-	-	-	-	240	250	298	303	618	753	886	966	4,323
Graduates	-	-	-	-	-	194	185	240	455	615	756	854	3,200
<u>Vocational</u>													
No. Centers	4	4	4	4	6	8	9	11	15	18	20	20	20
Enrollment	784	947	917	1,235	1,183	1,395	1,499	2,188	2,466	3,172	3,081	3,917	22,784
Graduates	533	643	623	839	876	695	1,144	889	1,275	1,495	2,024	2,455	13,491
<u>Industrial</u>													
Enrollment	-	-	-	-	-	-	1,102	3,240	8,255	6,837	5,105	5,341	29,880
Graduates	-	-	-	-	-	-	642	2,314	6,010	3,287	2,072	4,509	18,834
<u>Instructional</u>													
Enrollment	-	-	-	-	-	165	216	404	252	314	211	262	1,824
<u>On-the-Job</u>													
Enrollment	-	-	-	-	-	13,643	6,368	29,580	10,000	4,532	-	1,013	65,136
Trainee Supervisors	-	-	-	-	-	-	-	-	-	-	18	-	18

Source: Kingdom of Saudi Arabia, Ministry of Planning, Saudi Arabia. Achievements of the Development Plans 1390-1402 (1970-1982). Facts and Figures.

Table A10. Statistical Summary, Higher Education in the Kingdom of Saudi Arabia, 1974-75/1979-80.

University Level Education Program	Enrollment		Teachers		Graduates		Plan Total
	1974-75	1979-80	1974-75	1979-80	1974-75	1979-80	
University of Riyadh (Graduate Level)	5,638 -	10,496 (276)	959 -	2,308 -	581 -	1,803 -	6,859 (231)
University of Petro. & Minerals (Graduate Level)	1,497 (54)	2,651 (135)	166 -	357 -	155 -	459 -	1,727 (166)
King Abdulaziz University (Graduate Level)	3,737 -	11,610 (51)	633 -	1,832 -	431 -	1,580 -	4,221 (20)
Subtotal	10,872	24,757	1,758	4,497	1,167	3,842	12,807
Women's Teacher Colleges:							
Riyadh (Graduate Level)	790 -	3,893 (?)	79 -	364 -	74 -	692 -	1,710 -
Jeddah	219	2,895	22	289	-	659	1,146
Women's College of Arts	-	396	-	40	-	-	-
Subtotal	1,009	7,184	101	693	74	1,351	2,856
Islamic University (Graduate Level)	890 -	3,987 (176)	48 -	397 -	128 -	506 -	1,521 (92)
Imam Mohamed Ibn Saud Islamic U. (Graduate Level)	2,556 (96)	7,037 (1,541)	181 -	515 -	334 -	1,459 -	4,902 (1,444)
Subtotal	3,446	11,024	229	912	462	1,965	6,421
Total University Level	15,327	42,965	2,088	6,102	1,703	7,158	22,086

Source: Khalid, Hafiz Talal, The potential role of educational/instructional television in higher education and human resources. Development for the Kingdom of Saudi Arabia. Unpublished doctoral dissertation, University of Colorado, Boulder, Colorado, 1985.

Table A11. Students Training Abroad for Television Careers.

Field of Specialization	B.Sc.	M.A.	Ph.D.	Total
Engineering (all branches)	11	5	-	16
Public Administration	-	7	-	7
Radio & Television Programs, Production & Direction	23	6	-	29
Information	2	4	-	6
Political & Management Sciences	-	-	-	-
	--	--	--	--
Totals:	36	22	-	58

Students Who Have Returned with Degrees

Engineering (all branches)	44	1	-	45
Public Administration	4	4	-	8
Radio & Television Programs, Production & Direction	9	2	2	13
Information	1	1	-	2
Political & Management Sciences	-	4	1	5
	--	--	--	--
Totals:	58	12	3	73

Table A12. Saudi Television Manpower Distribution (1980-82).

Category	1980		1981		1982	
	Saudis	Arabs	Saudis	Arabs	Saudis	Arabs
Engineers and Technicians	325	59	350	40	380	33
Announcers, Directors and Newscasters	25	-	27	-	27	-
Administrators	110	17	120	15	150	10

APPENDIX B

Figures

Figure B1. Diagram of Distribution of Saudi Television Departments and Stations

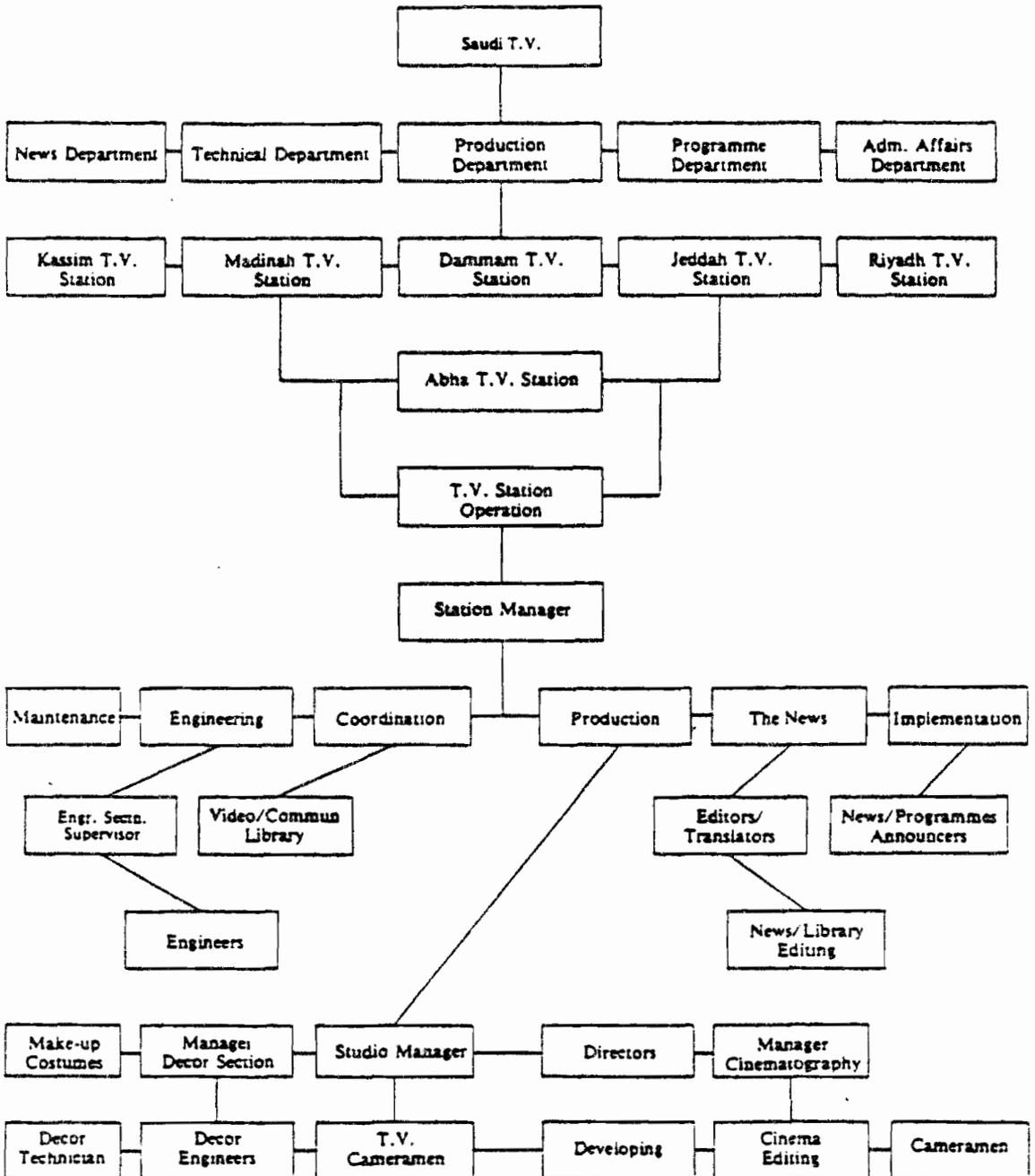
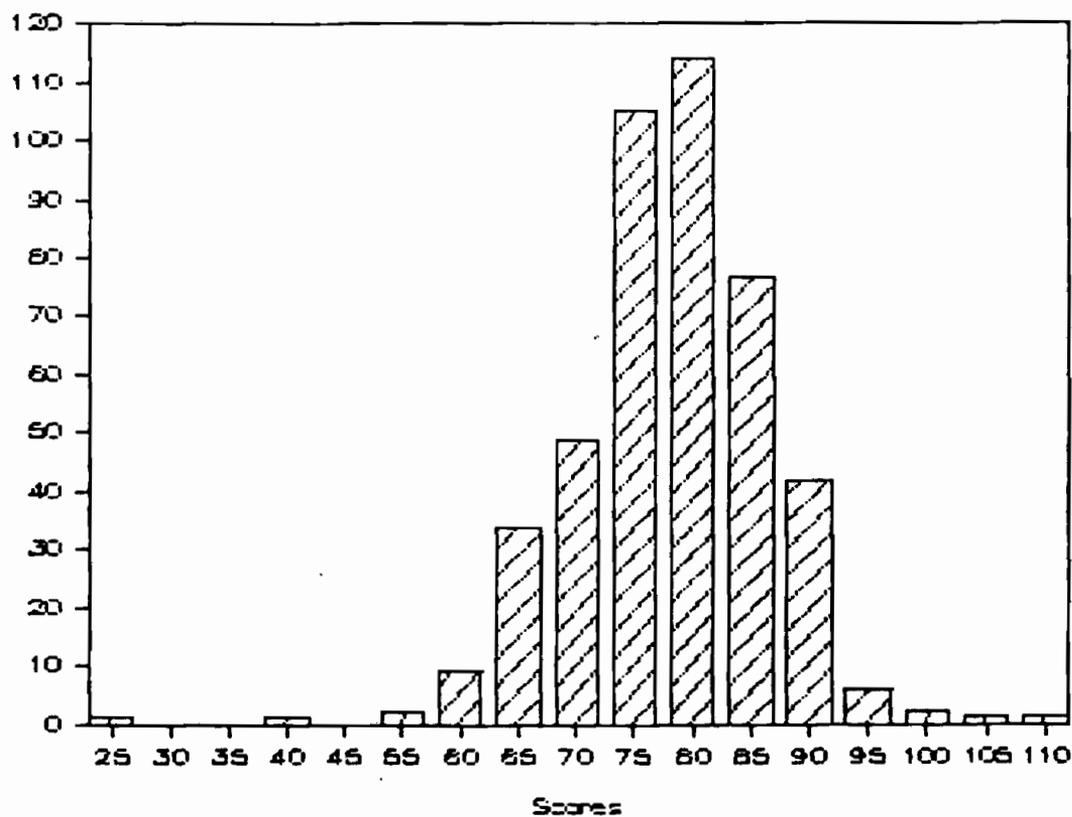
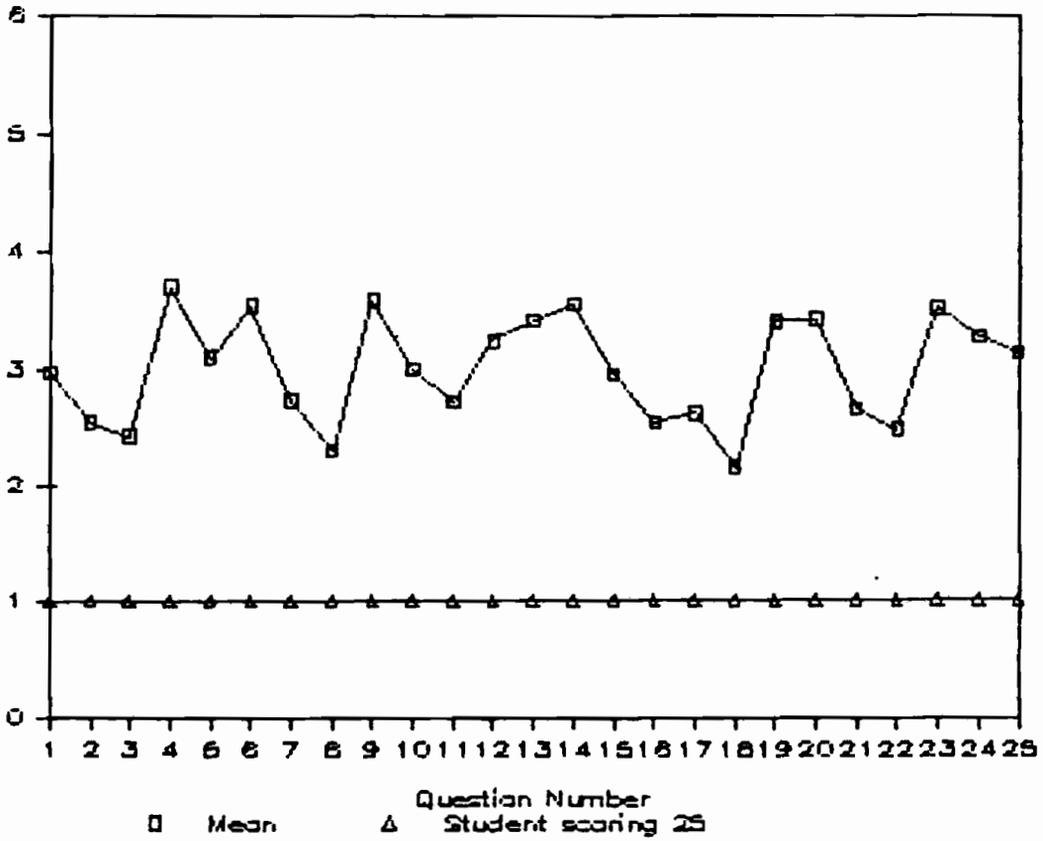


Figure B2. ANOVA Distribution of Scores, All Respondents



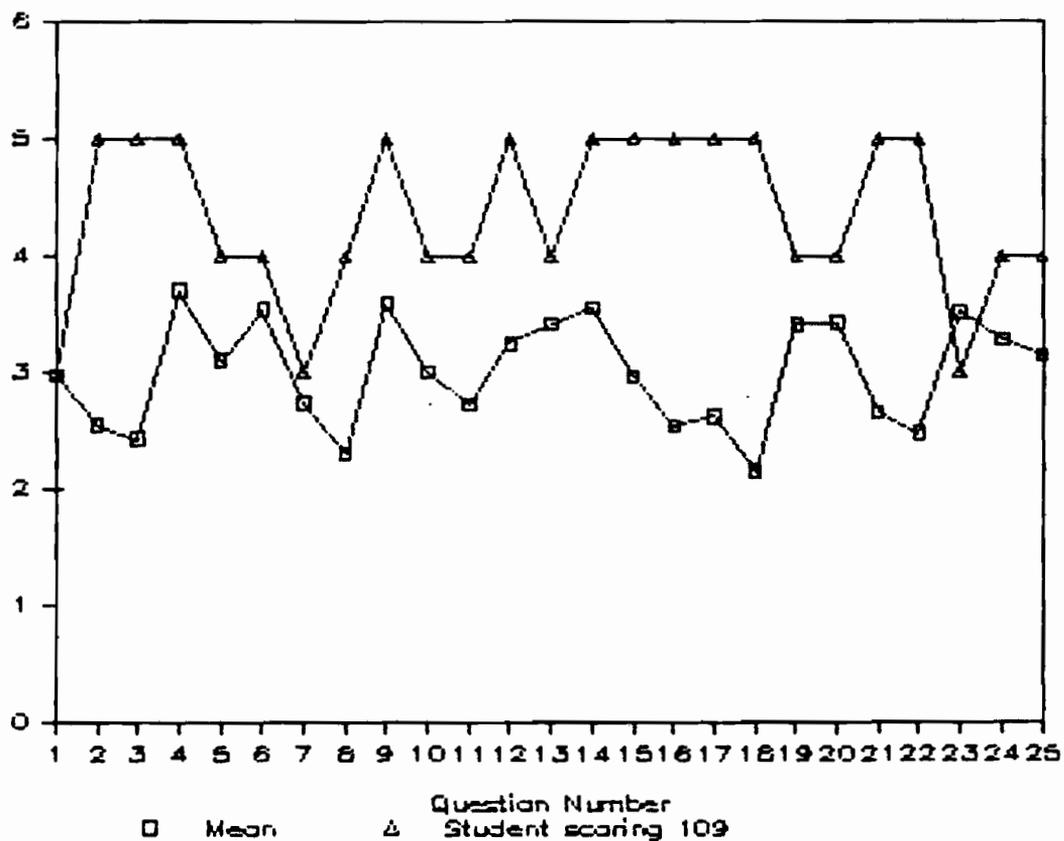
Note: Left Scale indicates number of responses.

Figure B3. ANOVA Student Profile Comparison.



Note: Left Scale indicates single score.

Figure B4. ANOVA Student Profile Comparison.



Note: Left Scale indicates single score.

APPENDIX C

First Questionnaire

Dear Friend,

I am preparing my doctoral thesis in education. My research is concerned with certain problems in secondary education in Saudi Arabia. My work seeks to investigate the educational TV programs in Saudi Arabia. This questionnaire is designed to obtain data about your feelings and attitudes relating to your field of study.

To be successful in my work I need your assistance in completing this questionnaire. The information you place here with me will be used for this purpose only. Your name will not be required on the questionnaire. Thank you.

Sincerely

Abdulmohsen Eraqi

Questionnaire

Please read this carefully, the following questionnaire was prepared to study the investigation of an educational television program in Saudi Arabia. The questions are divided into four categories.

Please answer all of the questions to the best of your knowledge and understanding.

1. Please check one of ___ student ___ teacher
2. Nationality
3. Age
4. How many brothers and sisters do you have?
5. How many are now in professional careers?
6. What was your major field when you attended high school?
Humanities ___ Science ___ Other ___

The following questions require yes or no answers. Please check the one you like.

The first category includes "reaction" questions.

1. Did you watch the following educational TV programs?
 - A. "The guide to success" Yes ___ No ___
 - B. "To whom the cup" Yes ___ No ___
 - C. "Our students in the field" Yes ___ No ___

2. Do you think that the educational TV programs help the student to understand the curriculum?
 - A. "The guide to success" Yes ___ No ___
 - B. "To whom the cup" Yes ___ No ___
 - C. "Our students in the field" Yes ___ No ___

3. Do you think that the program answers the questions students feel they need to have answered?
 - A. "The guide to success" Yes ___ No ___
 - B. "To whom the cup" Yes ___ No ___
 - C. "Our students in the field" Yes ___ No ___

4. Do you think something is lost when students miss a program?
 - A. "The guide to success" Yes ___ No ___
 - B. "To whom the cup" Yes ___ No ___
 - C. "Our students in the field" Yes ___ No ___

5. Do you think that the program helps students with homework?
 - A. "The guide to success" Yes ___ No ___
 - B. "To whom the cup" Yes ___ No ___
 - C. "Our students in the field" Yes ___ No ___

6. Do you think that the program helps students prepare for the exam?
- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___
7. Do you think that the program helps students to achieve good grades?
- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___
8. Do you think that the program helps to raise students' GPAs?
- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___
9. Do you feel that there is greater achievement for students after they see the program?
- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___
10. Do you think that the program tends to discourage private study?
- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___
11. Do you think the program makes study more efficient?
- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___

12. Do you think that, at the present time, the program doesn't make a large impact on learning?
- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___
13. Do you think that the program creates conflict between students' studies in your school?
- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___
14. Do you think that the program refreshes the knowledge in students' minds?
- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___

The second category includes "opinion" questions.

15. Do you think that the following program should be presented?
- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___
16. Do you want the materials of the program to explain the difficult concepts?
- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___

17. Is there any peril that students might prefer to see the program rather than come to school?

- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___

The third category includes "comparison" questions.

18. Do you think there must be coordination with the daily sequences that are given to the students and the material of the program?

- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___

19. Do you want that the materials of the program to explain what the teachers had explained in the school?

- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___

20. Do you think that there is coordination between what the students study in the school and the educational TV program?

- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___

The fourth category includes "continuing" questions.

21. Do you think educational TV programs should be discontinued?

- A. "The guide to success" Yes ___ No ___
- B. "To whom the cup" Yes ___ No ___
- C. "Our students in the field" Yes ___ No ___

22. Do you have a positive reaction to the educational TV programs?

A. "The guide to success" Yes ___ No ___

B. "To whom the cup" Yes ___ No ___

C. "Our students in the field" Yes ___ No ___

APPENDIX D

The 150 "Attitude" Questions

Attitude, the end product of the socialization process, significantly influences man's responses to cultural features, other people, and groups of people. Attitude entails an existing predisposition to respond to social features which, in interaction with situational and other dispositional variables, guides and directs the overt behavior of the individual (Cardro, 1955). The following questionnaire draws upon the work of Thurstone as a model (Thurstone, 1929).

The following statements concern the educational TV programs used in your school. The manner in which you respond to the statements will help us to know what you like and dislike about educational TV programs.

Please select one of the following five choices for each statement:

- A ----- STRONGLY AGREE
 - B ----- AGREE
 - C ----- UNDECIDED
 - D ----- DISAGREE
 - E ----- STRONGLY DISAGREE
-

1. Most Ed TV programs are unrewarding.
2. I would rather be alone when I watch Ed TV programs.
3. The Ed TV programs are my second teacher.
4. I consider the Ed TV programs as a second homework.
5. Ed TV programs differ from regular school.
6. All Ed TV programs presented by Saudi TV are excellent.
7. Some of my favorite recreation is watching Ed TV programs.
8. It is not a waste of time to study through Ed TV programs.

9. I am not interested in learning through Ed TV programs.
10. It is funny to think of Ed TV programs as a second school.
11. I don't get excited about the Ed TV programs.
12. I don't care about watching Ed TV programs.
13. Ed TV programs require coordination of time and material.
14. Ed TV programs require cooperation between the TV station and the school.
15. Ed TV programs are boring.
16. Time spent studying through Ed TV programs is worthwhile.
17. Schools should spend more time teaching through Ed TV programs.
18. Ed TV programs are a lot of work.
19. School should require Ed TV programs for the students.
20. Ed TV programs are a good way to encourage the student to spend his time on good things.
21. Ed TV programs and regular school are about the same.
22. I can't do much to improve my grade by watching Ed TV programs.
23. Watching Ed TV programs does not conflict with study in the school.
24. Ed TV programs are an easy way to get new knowledge.
25. A student should not have to learn by Ed TV programs if he is not interested in them.
26. Ed TV programs must be presented as a story.
27. A special TV channel is required for Ed TV programs.
28. Ed TV programs are helpful to make up knowledge.

29. Changing materials without changing the Ed TV programs would bother me.
30. The short presentation time of Ed TV programs is not enough to engross the student.
31. This Ed TV program should be considered one of the most valuable programs offered here.
32. This Ed TV program encourages the development of ideals.
33. My likes for this Ed TV program outweigh my dislikes for it.
34. The material covered by this Ed TV program is uninteresting.
35. The time that I spend studying this Ed TV program is completely wasted.
36. Only about 10% of the students enjoyed this Ed TV program.
37. This Ed TV program increases my qualifications to associate with educated people.
38. This Ed TV program helps the student feel that he belongs in college.
39. This Ed TV program is of some value in promoting high school life.
40. The value of this Ed TV program is overestimated by most people.
41. This Ed TV program is an important part of the educational system at this school.
42. No school should offer an Ed TV program of this type.
43. I raised my grades in my school courses by watching these Ed TV programs.
44. I usually enjoy studying the lessons assigned by this Ed TV program.
45. There is a definite need for this Ed TV program in our school.
46. This Ed TV program limits individualistic thinking to an unwholesome degree.

47. This Ed TV program has its defects, but it is still worthwhile.
48. The students don't seem to remember the information they receive from this Ed TV program.
49. I estimate that 90% of the students enjoy these Ed TV programs.
50. This Ed TV program helps prepare the students to face the problems of everyday life.
51. I shall be able to use the information obtained from this Ed TV program at various times during my high school career.
52. This Ed TV program is based upon sound educational principles.
53. The number of unexcused absences may be increased by watching this Ed TV program.
54. Sometimes this Ed TV program makes me doubt the value of a high school education.
55. This Ed TV program is not worth the time and effort it requires.
56. This Ed TV program is essential to adequate cultural development.
57. Through this Ed TV program I am better acquainted with the problems of acquiring an education.
58. The students who don't enjoy this Ed TV program slightly outnumber the ones who do enjoy it.
59. I believe that Ed TV programs of this type are needed by all high school students.
60. Sometimes the Ed TV programs are interesting, but more often they are not.
61. This Ed TV program helps in promoting proper conduct among high school students.
62. I feel that all students should be required to watch this Ed TV program.
63. Anyone who presents this Ed TV program should feel that he is performing a valuable service.

64. Even though I fail to appreciate it, this Ed TV program may be an important part of my education.
65. This Ed TV program has no integrating influence upon the values and ideals of the students.
66. The information gained from this Ed TV program will be valuable after I graduate from high school.
67. After watching this Ed TV program I shall be able to enjoy life more fully.
68. This Ed TV program gives ample opportunity for self-expression.
69. I have no antagonistic feelings towards this Ed TV program.
70. The basic principles of this Ed TV program are outmoded.
71. The amount of information derived from this Ed TV program is very large.
72. No time should be devoted to this Ed TV program outside of class.
73. This Ed TV program requires time which I could use more beneficially.
74. The material covered by this Ed TV program is extremely interesting.
75. I am inspired by this Ed TV program to make full use of my capabilities.
76. I don't like Ed TV and it scares me to have to watch it.
77. Ed TV programs are very interesting to me, and I enjoy Ed TV programs.
78. Ed TV programs are fascinating and fun.
79. I am always under a terrible strain when watching Ed TV programs.
80. Ed TV programs make me feel secure and at the same time they stimulate me.
81. My mind goes blank and I am unable to think clearly when studying by Ed TV watching programs.

82. I feel a sense of insecurity when watching Ed TV programs.
83. Ed TV programs make me feel uncomfortable, restless, and impatient.
84. I have good feelings towards Ed TV programs.
85. Ed TV programs are something that I enjoy a great deal.
86. I have never like Ed TV programs and they are among my most dreaded subjects.
87. I am happier with Ed TV programs than with any other kind of work.
88. I feel at ease with Ed TV programs and I like them very much.
89. I feel a definite positive reaction to Ed TV programs and I enjoy them.
90. I would rather study through Ed TV programs than go to school.
91. I love to study by Ed TV programs.
92. Ed TV programs are of great value.
93. The Ed TV programs have an irresistable attraction to me.
94. The Ed TV programs are profitable to everyone who watches them.
95. The Ed TV programs help develop good reasoning ability.
96. The Ed TV programs are very practical.
97. Any student who studies by Ed TV programs is bound to benefit.
98. Ed TV programs teach me to be accurate.
99. The Ed TV programs cover a universal subject.
100. All of our best students studied by Ed TV programs.
101. Ed TV programs are great for cultural subjects.

102. All lessons and all methods used by Ed TV programs are clear and definite.
103. Ed TV programs are OK.
104. I am willing to spend my time by watching Ed TV programs.
105. Ed TV programs save time.
106. Ed TV programs are a good pastime.
107. I don't believe that Ed TV programs will do anybody any harm.
108. I am careless myself in my attitude towards Ed TV programs, but I would not like to see this attitude become more general among students.
109. I have no definite like or dislike towards these Ed TV programs.
110. The Ed TV programs will only benefit the brighter students.
111. My parents never had these Ed TV programs so I see no merit in them.
112. I could do very well without these Ed TV programs.
113. The minds of young students are not kept active by Ed TV programs.
114. Ed TV programs do not teach you to think.
115. Ed TV programs are very dry.
116. I have no desire to watch Ed TV programs.
117. I see no value in Ed TV programs.
118. I would not advise anyone to watch Ed TV programs.
119. Ed TV programs are based upon "foggy ideas".
120. It is a form of punishment to have to watch Ed TV programs.
121. The Ed TV programs are the most undesirable subjects taught.
122. I detest Ed TV programs.

123. I look forward to Ed TV programs with horror.
124. The very existence of humanity depends upon these Ed TV programs.
125. I believe that the Ed TV programs are the basis for all high school courses.
126. The Ed TV programs give students the ability to interpret situations they will meet in every day life.
127. Ed TV programs will help the students socially as well as intellectually.
128. Ed TV programs increase my efficiency in school work.
129. There are more chances for the development of high ideals in Ed TV programs.
130. Ed TV programs teach methodological reasoning.
131. Ed TV programs aim mainly at the power of execution or application.
132. Ed TV programs are not based upon untried theories.
133. I think Ed TV programs are amusing.
134. Watching Ed TV programs doesn't worry me in the least.
135. My likes and dislikes for Ed TV programs balance one another.
136. Ed TV programs have their drawbacks, but I like them.
137. Ed TV programs are all right, but I would not watch any more of them.
138. No student should be concerned with the way this Ed TV program is taught.
139. This Ed TV program does not motivate the students to do better work.
140. The Ed TV programs interfere with development.
141. Ed TV programs are very dull.
142. The average student gets nothing worth having from the Ed TV programs.

143. This Ed TV program has no place in the modern world.
144. Ed TV programs are more like a plague than a method study.
145. Ed TV programs are all bunk.
146. No sane student would watch Ed TV programs.
147. Words cannot express my antagonism towards Ed TV programs.
148. Ed TV programs do not hold my interest at all.
149. My experience is that Ed TV programs are hopelessly out of date.
150. I never want to miss Ed TV programs because I always get inspiration from good Ed TV programs.

APPENDIX E

25 "Attitude" Questions with Highest Score
(from highest to lowest)

1. The material covered by this Ed TV program is extremely interesting.
2. I am not interested in learning through Ed TV programs.
3. All lessons and all methods used by Ed TV programs are clear and definite.
4. Ed TV programs do not hold my interest at all.
5. My likes for this Ed TV program outweigh my dislikes for it.
6. I feel a definite positive reaction to Ed TV programs and I enjoy them.
7. Ed TV programs are OK.
8. Most Ed TV programs are unrewarding.
9. The Ed TV programs interfere with development.
10. I never want to miss Ed TV programs because I always get inspiration from good Ed TV programs.
11. Ed TV programs are great for cultural subjects.
12. Ed TV programs are boring.
13. Ed TV programs are not based upon untried theories.
14. I don't believe that Ed TV programs will do anybody any harm.
15. Ed TV programs teach methodological reasoning.
16. The Ed TV programs are very practical.
17. Time spent studying through Ed TV programs is worthwhile.

18. This Ed TV program gives ample opportunity for self-expression.
19. The Ed TV programs are my second teacher.
20. I would rather be alone when I watch Ed TV programs.
21. Ed TV programs are of great value.
22. After watching this Ed TV program I shall be able to enjoy life more fully.
23. This Ed TV program requires time which I could use more beneficially.
24. I look forward to Ed TV programs with horror.
25. Ed TV programs are something that I enjoy a great deal.