A PROJECTION OF IRAQ EDUCATION NEEDS

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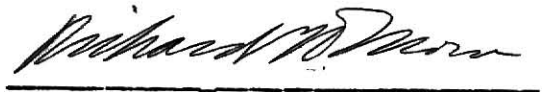

Major Professor

TABLE OF CONTENTS

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INTRODUCTION

The growth in demand for education is greater than ever, especially in the developing part of the world. Characteristic of modern culture is the focus on education and acceleration of economic growth.

Iraq is one of the developing countries which is struggling to achieve greater economic and social development, and to raise its standard of living. It must rid itself of ignorance, poverty, backwardness and illness. Education is crucial and should have first priority in this country's plan to achieve economic and social development.

Availability of natural resources is not enough to move a society from its traditional agricultural stage to a developed country. A number of educated youth will be necessary to achieve movement. Education of youth can prove to be an excellent investment for they can better manage and develop the resources.

For example, along with Iraq are Kuwait, Saudi Arabia and other Arabian countries which are rich in natural resources but considered underdeveloped because of widespread illiteracy, ignorance, and a shortage of educated youth.

The interrelatedness of education and economic development was clearly described by Gomez, E. (1961). He said that the relationship of natural resources and the role of education could be noticed through any economic development.

He also stated that from the standpoint of any economic development three factors are of basic importance: natural resources, physical

capital and human resources. It has been demonstrated that in the present stage of technology, natural resources are not the determining factors in economic development. Countries like Switzerland, Holland, Denmark and Norway, for example, have achieved a high level of development despite the scarcity of the resources.

Experience has proven that capital investment, though more directly related to economic development than the availability of natural resources is insufficient. Venezuela, is a good example of a country with large capital investment yet lagging economic development. In order to have a more desirable allocation of investment and to make full use of its resources, a qualified managerial, engineering and labor force is necessary for maintaining such development. Thus the human element is not only the aim of economic activity, but the most important factor in determining the allocation of resources.

It follows, then, that education and training are very important, not only from the subjective point of view of the individuals receiving such benefits, but also from the standpoint of accelerating the economic growth of a nation. "No investment is more productive than in education and training," (Gomez, 1961, p. 71).

According to Myrdal, A. (1961, p. 138), the secret for achieving a high standard of living in Sweden was education. He said Sweden was fortunate to get universal literacy - through compulsory schooling covering the total population - half a century before Sweden was seriously drawn into the orbit of industrialization. He explained a portion of Danish history saying that the grass-roots type of education liberated and fortified the people's economic stamina.

The role and importance of education was clearly described in the

UNESCO Paper No. 45, "Elements of Educational Planning" (1963). It states that the development of education is of prime importance to every country in the world. The swift and far reaching social changes now in progress, the enormous growth of population, the exigencies of quickly developing economies, and the wealth of knowledge are some of the factors which give the problem special urgency today.

The paper gave as an example the fact that the Arab countries urgently need over-all planning to raise their economic and social standard and must include development of educational ability as an integral part of such overall planning. (p. 40)

This document clearly described the need to give priority to education in any planning. It classified education as an item of consumption as well as a factor of production; the former, because it is valued, and the latter because it produces the skills, attitudes and the personality upon which modern technology and organization rest.

Education yields a very high margin of indirect returns since it is aimed directly at modifying people rather than things. It is always easier to produce or replace consumer goods than it is to create the skilled man-power which makes them. (p. 8)

Thus, the case for education is made, if indeed, a case must be made.

Review of Iraq Population Growth

Iraq is considered one of the developing countries. Its common characteristics as described by Al-Attiah (1965) are its low population density and abundance of natural resources.

Information concerning the growth of Iraq population is dependent

upon valuable statistical data. The Iraq census is very recent compared with the United Arab Republic, Syria and Lebanon. The first population survey made by the Iraq Government was in 1934. Although there were reported 3,380,533 persons, not all the census information can be considered accurate. For example many males of age 15 and over were registered as female in order to escape from the service in the army.

The next survey was in 1947 and reported a population of 4,816,180. According to Al-Attiah this census also is not considered dependable or useful for future study.

The third census was in 1957 and reported a population of 6,339,960 persons. It is considered by Al-Attiah the most complete census and reliable for making population projections. (p. 24-29)

Background of Education in Iraq

The present system of education in Iraq was founded in 1925 when the first national government was established and the first congress was elected (Al-Attiah, 1965). During the first quarter of this century there were no schools, and those children who learned to read and write were taught mostly in the churches and mosques. When Iraq was controlled by the Turkish Government some schools were established, and the number of students in 1913 was approximately 7,00 in 1920. Education at all levels increased very slowly during the first period of national government in 1925 and remained so until 1950 after which it grew rapidly, particularly in the primary level. The growth of enrollment for the period 1956 to 1965 is presented in Table 1.

Table 1. Growth of enrollment in all levels of education from 1956-1965 (in thousands)

Year	Boys	Girls	Both
1956	320	100	420
1957	340	120	460
1958	390	130	520
1959	490	150	640
1960	710	190	800
1961	590	250	940
1962	740	280	1,020
1963	770	290	1,060
1964	790	310	1,100
1965	880	320	1,200

Source: Educational Statistics Report, Ministry of Education, Iraq (1965) p. 165.

Three factors slowed the growth of education in Iraq prior to 1956: insufficient financial support, shortage of teachers, and failure of the people to take the advantages of education. Furthermore, the low level of incomes restricted enrollment, and the English system, the aristocrat of education, tended to limit the number who could go on to high school and higher education. Al-Attiah attributed widespread illiteracy, especially among the females, farmers and the adults, as a primary factor which limited the encouragement of education. The 1957 census reported less than 12% of the population could read and write, and of these approximately three-fourth were male.

The illiteracy rate is high in Iraq and a large number of children

of school age are not in school despite the requirement of compulsory education at the primary level. There were 57% of school age children ages (7-12) who were in school. Of the boys who were of primary school age 82% were in school in contrast to 32% of the girls. The number of children of primary school age in 1957 was 430,000 of which 320,000 were boys. (Educational Statistical Annual Report, p.113, 1961)

There was a 90% increase in enrollment at the primary level for the period of 1957-1962 (Statistical Annual Reports, p. 12, 1962). In addition to the growing respect for education there are several factors affecting enrollment in Iraq, including social, economic and regional factors.

The rural population of Iraq, representing 56% of the total population in 1967, exist at a low economic level. V. L. Griffiths (1966, p. 24) discussed the importance of including the rural in planning for schools. He suggested there should be the development of a network of schools in the rural area to improve the quality and the quantity of education in these regions.

Parents in higher economic levels are more likely to send their children to school than those of lower levels. Also parents with better educations are more likely to insist their children finish high school and go on for higher education. Poignant (1967, p. 32-33) noted that almost all of the children in the higher socio-economic level go to secondary schools, and a large portion attend the university. The dropout rate is highest at the lower levels of education and least at the higher levels. The free system of education encourages students to stay in schools until they finish.

The percentage of students who graduated from fifth grade in high

school in 1965 was lower than in 1961 (46% vs 32%). On the other hand percentage of enrollment of high school graduates entering college was higher in 1965 than it was in 1961 (95% vs 56%). These changes reflect a possible change in standards for passing of high school graduation examination, an increase in number of students, and a greater selective student eligible for college enrollment. (Educational Statistical Reports, 1961, Table number: 13-A, 13-B and 40) and (Educational Statistical Report, 1965, Table number: 15-A and 40).

Present Status of Education in Iraq

The education system in Iraq consists of: (1) Pre-primary, (2) Primary, (3) Secondary, (4) Vocational Education consisting of agricultural, industrial, commercial and home-economics schools and (5) Higher Education. (International Yearbook, 1955, p. 209-2010), (Statistical Annual Reports, 1965, p. 12).

Education in Iraq is free at all levels from primary through the university. It is financed by the government, both National and local. Schools tend to be concentrated in the towns and big cities. In most of the rural areas schools are not well built and do not have sanitary facilities. The population group with the highest illiteracy rate is the farm female.

Higher education in Iraq is relatively new compared with other Arabian countries such as United Arab Republic and Lebanon. Baghdad University was founded in 1957. Prior to this time higher levels of education consisted of separate colleges such as College of: Medicine, Commerce, Economic and Political Science, Education, Science, Art, Girls, Pharmacy Medicine, Dental Medicine, Veterinary Medicine, Law and

Agriculture (Al-Attiah, 1965, p. 39-45).

In the last decade the university has been enlarged by the establishment of Basra University in the south and Mosul University in the north and a private evening university in Baghdad.

Teacher qualifications differ by school levels. All teachers at the pre-primary level are women. At the primary level are both women and men who generally are graduates of teachers training institutions and home-economics schools. The median age is 26 years and the median monthly salary is 37 Dinar (Dinar = $2.80).

At the secondary level, teachers are generally graduates of Baghdad University. Women teach at the girls high schools and men teach at the boys high schools. The median salary is 52 Dinar per month and the median age is 34 years (Statistical Annual Report, p. 29-58, 1965). At the college level, teachers are graduates of foreign colleges and institutions, or are qualified foreign professors teaching at Baghdad University on contract.

The period of study for students is two years at the pre-primary level, six years at the primary level, five years at the high school level, three years at intermediate and two years preparatory. Not all those who graduate from intermediate go to preparatory. They may go to vocational schools for three years. Those who graduate from preparatory are eligible to go on to the colleges and institutes of Iraq universities if they have the required grade point average. Graduates of vocational education may go on to higher education in the same field. For example, a graduate of an agricultural vocational school may go to the agriculture college if his grades meet the standard.

Objective

The objective of this thesis is to project, for the years 1975 and 1985, the number of enrolled students and the need for schools and teachers. The projection will be based on assumed criteria regarding educational standards and projected population.

REVIEW OF LITERATURE

This literature review is limited to the procedures for estimating population and for projecting education requirements.

Methods of Projecting Population

Projection of population requires the making of such basic assumptions as there will be no disastrous wars, no wide-spread epidemic or major economic depressions (Current Population Report, No. 381, 1967, p. 1). Then the growth in total population can be derived from the natural increase (The United Nation Publication, No. 28, 1959, p. 47).

The population at any given time can be calculated by taking the known population at the beginning of the period and adding the natural increase. In algebraic symbols change in natural increase in population can be expressed: $C = B - D + M$. Where C stands for the change in natural increase, B stands for the number of births, D stands for number of deaths and M stands for net migration (Collver, 1965, p. 6).

One of the more well developed population projections series is that developed by the U. S. Census. The Current Population Report, No. 381 series, p. 25 (December 18, 1967) projects the total population of the United States by age, sex and color to 1990.

Four basic series of population projections were used, designated as: Series A, B, C and D. These series assumed different levels of fertility and no difference in mortality or net migration.

The first (high) series, Series A, continues the high fertility rate of the mid 1950's of 3,350 children per women aged 18-39 years.

Series B is a moderately high series in that it presumes only a modest drop from the levels of fertility in the last decade with a terminal fertility rate of 3,100.

The terminal levels of Series C and D are specifically based on the assumption that fertility will drop to some level commensurate with levels observed during the 50-years preceding the large postwar rise in fertility. The terminal completed fertility of Series C is 2,775 and Series D, 2,450.

The average annual growth rate ranged in the period 1966-1990, from 1.0 and 1.1 percent under Series D to 1.5 and 1.8 percent under Series A.

The Current Population Report, No. 286 series, p. 25 for July, 1964, used the same methodology and assumed fertility rate of 3,350 for Series A; 3,234 for Series B and 2,300 for Series C.

Al-Attiah (1965) predicted a natural increase for the Iraq population to be 2.2% to 2.3% for the coming decade. He explained this would conform to anticipated economic and social developments. However, the present rate is 2.5% (Population References Bureau).

Methods Projecting Enrollment

Methods for estimating the needs for education are suggested by the author of "Elements of Educational Planning":

1. Estimate the probable total population.
2. Estimate the number of children, young people and adults

to be educated, considering the following factors:

Total length of schooling

Proportion of population in school

Effective enrollment rate.

3. Estimate teacher and school requirement using assumed ratio of pupils to teacher and pupils/school for each level and branch of education. UNESCO Documents, No. 45, (1963), p. 19.

Folger and Nam (1967) used modification of these methods to project school and college enrollment for the American population of 5-34 years of age. They developed two projections series, a high and a low series.

The high projections series was based on: (1) The series (A) projected population of the Current Population Reports series, p. 25, No. 286 (July, 1964); and (2) enrollment rates, by single years of age, using the average enrollment rate for 1950-1963 as a base.

The low projections series was based on: (1) The series (C) projected population of the Current Population Reports No. 286 (July, 1964); and, (2) The enrollment rate of one-half that of the high series (Folger and Nam, 1967), p. 233-7).

Projections of school and college enrollment in the United States for the period 1966 to 1985 were made by the Bureau of Census and published in the Current Population Reports, p. 25, No. 338 (May 31, 1966). Four series of enrollment projections were presented, each based on a different combination of assumptions about the size of school age population in each age group which will be in school ("enrollment rates"). The two series of population projections combined with each of the two series of enrollment rates comprised the four enrollment series.

Projection of school and college enrollment for Iraq population is not available.

PROCEDURES

Estimates of Iraq population for 1975 and 1985 will be made by using methods described by Collver, O. A. (1965, p. 6), in modified form those of Folger and Nam (1967, p. 13,233), and an assumed net annual natural increase of 2.5% and 2.0%.

The following basic steps were taken:

1. Obtain demographic data on Iraq population by school and non-school age and by sex groups for the period 1957-1965 to be used as a base.
2. Project the total population for 1975 and 1985 by applying the estimated net annual population growth rate to the 1965 population.
3. Classify the population into school and non-school age groups, determine the school age population, and estimate the number of teachers and schools.

Population Projection

Projection of population will be based on two assumptions regarding the natural growth rate: (1) a constant rate, for the period 1965-1985, and (2) a decreased rate for the period 1975-1985.

Population projection for 1975 and 1985 are based on the assumption that the natural increase for Iraq population will remain constant at the present growth rate of 2.5%. Justification for this assumption is that

although progress in medicine will reduce the death rate, it will be offset by increased use of birth control. The natural increase of 2.5% is the difference between the birth rate of 48 per 1,000 and a death rate of 23 per 1,000.

Population projection for 1975-1985 decade is based on an assumed natural increase of 2.0%. The basis for this assumption is that use of birth control will have a greater effect than the advances in medical care. It is assumed that the birth rate will decrease from 48 to 42 and the death rate from 23 to 22 per 1,000. Thus the natural increase will shift from 2.5% to 2.0%.

The projected population for the year 1975 and 1985 will be distributed by age and sex, assuming the same age distribution as prevailed in 1957 for the purpose of classifying the population into school and non-school age groups by age. The same population distribution as existed in 1957 between males and females is assumed for the year 1975 and 1985 to project the school population. This is consistent with Folger and Nam's (1967, p. 13) statement that the male and female population have about the same rate of growth.

Iraq's total population and its distribution by school and non-school age groups are presented in Table 2. For the years 1957, 1965, 1975 and 1985. The two estimates for 1985 differ in the net growth rate.

In subsequent tables the total population is classified by sex for each year: in Table 3 for 1957, Table 4 for 1965, Table 5 for 1975, Table 6 for 1985 assuming an annual growth rate of 2.5%, and in Table 7 for 1985 assuming a 2.0% growth rate.

Table 2. Iraq population of school and non-school age, by years.

Age Group	%	1957	1965	1975	1985	1985
All Ages	100.0	6,339,960[a]	8,261,527[b]	10,574,080[c]	12,867,340[d]	13,534,822[e]
Under 1	3.3	208,475	272,613	348,942	393,843	446,665
1 - 2	8.0	507,030	660,960	845,920	954,746	1,082,800
3	4.1	284,220	338,701	433,534	500.907	566,534
4 - 5	7.6	478,851	627,836	803,624	910,019	1,031,624
6 - 12	18.7	1,187,166	1,544,944	1,977,338	2,239,013	2,538,337
13 - 19	11.0	702,105	908,820	1,163,140	1,493,140	1,493,140
20 - 24	6.2	395,678	512,244	655,588	841,588	841,588
25 - 29	7.0	448,469	578,341	740,180	947,745	947,745
30+	34.1	2,142,592	2,741,761	3,605,734	4,615,435	4,615,435

a. Source: Demographic Year Book, 1963, Table 30.

b. Source: Demographic Year Book, 1966, Table 2

c. Assumes 2.5% annual net growth rate

d. Assumes 2.0% annual net growth rate

e. Assumes 2.5% annual net growth rate

Table 3. Iraq population in 1957 of school and non-school age, by sex.

Age Group	Male %	All	Male	Female
All Ages	50.2	6,339,960	3,185,117	3,154,843
Under 1	53.9	208,475	112,408	96,067
1 - 2	50.5	507,003	255,876	251,127
3	49.9	258,220	128,756	129,464
4 - 5	50.1	478,851	242,165	236,686
6 - 12	52.2	1,187,166	619,060	568,106
13 - 19	49.1	702,105	344,781	357,324
20 - 24	46.6	395,678	184,412	211,266
25 - 29	48.9	448,469	219,682	228,787
30+	50.1	2,142,592	1,072,266	1,070,326
Unknown		11,374	5,711	5,663

Source: Computed from Table 30, Demographic Year Book, 1963.

Table 4. Iraq population by age and sex for school and non-school age for the year 1965.

Age group	Both sex	Male	Female
All ages	8,261,527	4,147,286	4,114,241
Under 1	272,613	146,938	125,675
1 - 2	660,960	333,784	327,176
3	338,701	169,011	169,690
4 - 5	627,836	314,548	313,288
6 - 12	1,544,994	806,486	738,508
13 - 19	908,802	446,230	462,590
20 - 24	512,244	328,705	273,904
25 - 29	578,340	282,082	296,258
30+	2,781,761	1,393,622	1,388,099

Source: Demographic Year Book, 1960, Table 2.

Table 5. Iraq population by age and sex for school and non-school age for the year 1975.

Age group	Both sex	Male	Female
All ages	10,574,080[a]	5,308,188	5,265,892
Under 1	348,942	188,079	160,863
1 - 2	845,920	427,189	418,731
3	433,534	216,333	217,201
4 - 5	803,624	402,615	401,009
6 - 12	1,977,338	1,032,170	945,168
13 - 19	1,163,140	571,101	592,039
20 - 24	655,588	305,504	350,084
25 - 29	740,180	361,948	378,232
30+	3,605,734	1,806,472	1,799,262

a. Estimated number for Iraq total population at annual growth rate 2.5%.

Table 6. Iraq population by age and sex for school and non-school age for the year 1985.

Age group	Both sex	Male	Female
All ages	13,534,822[a]	6,794,480	6,740,348
Under 1	466,655	240,747	205,908
1 - 2	1,082,800	546,814	535,986
3	556,534	277,710	278,824
4 - 5	1,031,624	516,843	514,781
6 - 12	2,538,388	1,325,015	1,213,326
13 - 19	1,493,140	733,131	760,009
20 - 24	841,588	392,180	449,408
25 - 29	947,745	463,447	484,298
30+	4,615,435	2,312,332	2,303,103

a. Total population for Iraq estimated at 2.5% annual growth rate.

Table 7. Iraq population by age and sex for school and non-school age for the year 1985.

Age group	Both sex	Male	Female
All ages	12,867,340[a]	6,459,404	6,407,936
Under 1	393,843	212,281	181,562
1 - 2	9,547,460	482,147	472,599
3	500,907	249,953	250,954
4 - 5	916,019	455,920	454,099
6 - 12	2,239,013	1,168,764	1,070,251
13 - 19	1,415,370	733,131	760,009
20 - 24	797,754	392,180	449,408
25 - 29	900,690	463,447	484,298
30+	4,387,762	2,312,332	2,303,103

a. Total population estimated at 2.0% annual growth rate.

Enrollment Projection

Procedures for estimating the enrollment are based on (1) the projected population or Iraq by sex and school age, (2) an assumed enrollment rate and dropout rate, (3) methods described by the UNESCO Documents No. 45, p. 19 (1963) "Elements of Educational Planning," and (4) modification of methods described by Folger and Nam (1967).

Enrollment projections are made for the following age groups: Ages 4-5, pre-primary level; Ages 6-12, primary level; Ages 13-19, high school level including vocational education, teacher training and home economics schools; Ages 20-29, higher education.

Pre-primary level

Projections of enrollment at this level are based on the assumption of universal attendance with no dropouts. Hence, the enrollment numbers coincide with the population projections.

The projected number of schools needed is based on an assumed student-to-school ratio of 135:1. The projected number of teachers needed is based on the assumed students-to-teacher ratio of 29:1. These ratios were current in Iraq in 1965 (Statistical Annual Report, p. 20).

Primary level

Projections of enrollment at this level are also based on the assumption of universal attendance and zero dropout rate. Hence, the enrollment numbers coincide with the population projections.

The projected number of schools needed is based on an assumed student-to-school ratio of 208:1. And the projected number of teachers needed is based on an assumed students-to teacher ratio of 25:1. These ratios correspond to those in Iraq in 1965 (Annual Statistical Report, p. 21).

High school level

Projections of enrollment at the high school level are based on (1) the projected population of boys and girls of this age group, (2) the enrollment rate and (3) the dropout rate. The dropout rate was assumed to be 5% for girls and 7% for boys. The enrollment rate was based on the change in enrollment rate between 1957 and 1965 of 22.4% for boys (the difference between 15.7% in 1957 and 37.5% in 1965) and of 5.1% for girls (the difference between 5.6% in 1957 and 10.7% in 1965).

Four series were developed using different proportions of that change in enrollment rate to calculate the enrollment rate which would be applied to the projected populations to estimate the number of boys and girls enrolled in high school:

Series A (Low) assumes no change in the rate of enrollment and that the enrollment rate in 1975 and 1985 will be the same as in 1965, that is, 37.5% for boys and 10.7% for girls.

Series B (Medium low) assumes that the change in rate from 1965 to 1975 will be one-half the change between 1957 and 1965, and the change in rate between 1975 and 1985 will again be one-half that between 1957 and 1965. Thus the enrollment rates for boys are 48.7% for 1975 and 59.9% for 1985, and for girls, 13.3% for 1975 and 15.8% for 1985.

Series C (Medium) assumes that the change in rate from 1965 to 75 will be equal to that change in rate between 1957 and 1965, and the change in rate between 1975 and 1985 will be one and one-half of the change between 1957 and 1965. Thus, the enrollment rates for boys are 59.9% for 1975 and 71.1% for 1985, and for girls, 15.8% for 1975 and 18.5% for 1985.

Series D (High) assumes that the change in rate from 1965 to 1975

will be equal to one and one-half the change in rate between 1957 and 1965, and the change in rate between 1975 and 1985 will be double the change in rate between 1957 and 1965. Thus, the enrollment rates for boys are 71.1% for 1975 and 82.3% for 1985, and for girls, 18.5% for 1975 and 20.9% for 1985.

Teacher and school needs are based on an assumed student-to-teacher ratio for boys of 30:1 and for girls of 25:1, and on an assumed student-to-school ratio of 360:1 for boys and 250:1 for girls. These are the ratios reported for Iraq in 1965 (Statistical Annual Report, p. 85-90).

College level

Projections of enrollment at this level are based on (1) the projected populations of boys and girls, (2) the enrollment rate and (3) the dropout rate. The dropout rate was assumed to be 5% for boys and 3% for girls. The enrollment rate was based on the change in enrollment rate between 1957 and 1965 of 2.4% for boys (the difference between 0.99% in 1957 and 3.4% in 1965) and 0.76% for girls (the difference between 0.34% in 1957 and 1.1% in 1965).

Four series were developed using different proportions of that change in enrollment rate to calculate the enrollment rate which would be applied to the projected population to estimate the number of boys and girls enrolled in college. These four series are the same as applied at the high school level, but with different proportions: For Series A, no change; Series B, an equal change between 1965 and 1975 as between 1957 and 1965 and between 1975 and 1985 one and one-half the change of 1957 and 1965; Series C, double the change for 1975 and two and one-half for 1985; Series D, triple the change for 1975 and three and one-half for 1985. The resulting rates are:

	Boys		Girls	
Series	1975	1985	1975	1985
A	3.4	3.4	1.1	1.1
B	5.8	7.0	1.76	2.24
C	8.2	9.4	2.62	3.0
D	10.6	11.8	3.38	3.76

Teacher and school needs are based on an assumed student-to-teacher ratio of 35:1, and an assumed student-to-college ratio of 600:1. These are based on ratios reported for Iraq in 1965 (Statistical Annual Report, pp. 150-2).

RESULTS

The results are presented and discussed according to the levels of education.

Pre-primary Level

The number of pre-primary pupils coincides with the projected number of all children of ages 4-5 as shown in Table 2 because of the assumption of universal enrollment. This assumption ignores the fact that in 1965 only 131.8% of the 627,836 children of age group 4-5 were in school. Hence, the high projections for 1975 and 1985 reflect not only the increased population but the additional 71% who had not been but are assumed to be in school.

The numbers of teachers and schools needed are shown in Table 8. These so greatly out distance the available schools and teachers it would be most unlikely that universal enrollment at this level is practical.

Primary Level

The projected number of primary students coincides with the number of children aged 6 to 12 in Table 2 because of the assumption of universal enrollment under the law of compulsory attendance. Although about one and one-half million in 1965 were in this age group, less than two-thirds were in school. Hence, the projections for 1975 and 1985 reflect not only the growth in population, but implies acceptance of compulsory education.

The expansion in number of schools and need for teachers is evident from the data presented in Table 8.

Table 8. Project number of students, schools and teachers, 1965 - 1985 (pre-primary and primary level).

	1965[a]	1975	1985	1985[b]
		Pre-primary		
Student	131,846	803,624	910,019	1,031,624
Schools	372	6,088	6,741	7,815
Teachers	112	27,711	31,380	35,201
		Primary Level		
Student	925,943	1,977,338	2,239,013	2,538,338
School	4,942	9,506	10,764	12,203
Teacher	45,201	76,053	89,560	97,623

a. Source, Annual Statistical Report for Ministry of Education 1964-1965.

b. Assumes annual net growth rate 2.5%.

High School

The projected number of students by sex for each of the four series is presented in Table 9. The estimates range from an increase of only 50% to over 300% depending on the series. All projections indicate a greater number of boys than girls.

The significance of enrollment for the number of teachers needed is presented in Table 10. The range in need is from double to quadruple the number of teachers depending on the series. The disproportionate increase in number of teachers needed by 1975 reflects the current shortage of teachers in schools. The demand for teachers and the need for teacher training is beyond question.

The need for increased school quarters is shown in Table 11. These reflect the same order of expansion as the number of teachers.

Table 9. High school enrollment by sex, and project series, 1965-1985.

Sex	1965[a]	1975	1985[b]
	Series A - Low		
Boys	167,233	199,171	255,683
Girls	49,393	60,180	77,254
Both	216,626	259,351	332,937
	Series B - Medium Low		
Boys	167,233	267,027	408,404
Girls	49,393	74,803	114,076
Both	216,626	341,830	522,480
	Series C - Medium		
Boys	167,233	318,142	484,776
Girls	49,393	88,864	132,848
Both	216,626	407,006	617,627
	Series D - High		
Boys	167,233	377,628	561,130
Girls	49,393	102,933	151,575
Both	216,626	480,561	712,705

a. Source: Annual Statistical Report Ministry of Education, 1964-1965.

b. Population annual net growth rate at 2.5%.

Table 10. Number of high school teachers needed by sex and project series, 1965-1985.

Sex	1965[a]	1975	1985[b]
	Series A Low		
Men[a]	3,999	6,639	8.523
Women[b]	1,945	2,407	3,090
Both	5,944	9,046	11,613
	Series B Medium Low		
Men	3,99	8,900	13,613
Women	1,945	2,992	4,563
Both	5,944	11,892	18,176
	Series C Medium		
Men	3,999	10,604	16,159
Women	1,945	3,554	5,313
Both	5,944	14,158	21,472
	Series D High		
Men	3,999	12,587	18,704
Women	1,945	4,117	6,063
Both	5,944	16,704	24,767

a. Annual Statistical Report, 1964-1965.

b. Annual net growth rate 2.5%.

Table 11. Number of needed high schools by sex and project series, 1965-1985.

Sex	1965[a]	1975	1985[b]
	Series A - Low		
Boys	385	553	710
Girls	169	241	381
Both	554	797	1,091
	Series B - Medium Low		
Boys	385	742	1,134
Girls	169	299	456
Both	554	1,041	1,590
	Series C - Medium		
Boys	385	884	1,346
Girls	169	356	531
Both	554	1,240	1,877
	Series D - High		
Boys	385	1,049	1,559
Girls	169	412	606
Both	554	1,461	2,165

a. Source: Annual Statistical Report Ministry of Education, Iraq. 1964-1965.

b. Population annual net growth rate 2.5%.

College Level

The enrollment projection for college is presented in Table 12. The low series predicts approximately a doubling while the high series predicts a six-fold expansion, with an eleven-fold expansion for girls.

One significance of this expansion for the number of teachers and colleges is reflected in the data presented in Table 13.

Table 12. College enrollment by sex and project series, 1965-1985.

Series	1965[a]	1975	1985[b]
	Series A - Low		
Boys	17,800	22,448	31,224
Girls	6,439	8,727	12,536
Both	24,239	31,175	43,760
	Series B - Medium Low		
Boys	17,800	37,575	55,327
Girls	6,439	13,671	20,569
Both	24,239	51,246	75,806
	Series C - Medium		
Boys	17,800	49,406	75,132
Girls	6,439	22,873	35,731
Both	24,239	72,279	110,863
	Series D - High		
Boys	17,800	58,608	98,550
Girls	6,439	39,852	66,783
Both	24,239	98,460	167,334

a. Annual Statistical Report Ministry of Education, 1964-1965.

b. Population annual net growth rate at 2.5%.

Table 13. Number of teachers and colleges needed by project series.

Sex	1965	1975	1985[d]
	Series A - Low		
Teachers	641[a]	890	1,250
Colleges	43[b]	52	73
	Series B - Medium Low		
Teachers	641	1,464	2,165
Colleges	43	85	126
	Series C - Medium		
Teachers	641	2,065	3,167
Colleges	43	121	185
	Series D - High		
Teachers	641	2,813	4,723
Colleges	43	164	275

a. Professors, assistant professors and instructors only.

b. All public colleges and institutes in Iraq.

c. Population annual net growth rate 2.5%.

DISCUSSION

Expansion can be expected to occur in enrollment at all levels. This will result in a great demand for teachers and facilities.

The problem of expansion at the pre-primary level could be solved in two ways: (1) curbing the birth rate, or (2) establishing kindergartens in big towns and cities for children whose mothers work. The need in rural areas is not so great.

At the primary level, the problem of expansion also could be avoided by curbing the birth rate. This will be the only solution as long as the government policy is compulsory education.

A large number of students will be ready to enroll in the high schools as a result of the expansion in enrollment at primary levels. A policy of restricting entrance to only students with high academic standard would aleviate the problem. This would eliminate the poor students, but also deny them and Iraq the benefits of their education. Also the problem will vary in severity depending on success in implementing a birth control program.

At the college level, education will be costly and a large number of qualified instructors, professors, laboratory facilities will be needed. For this reason the large enrollment will be hard to achieve, especially in the near future. In addition, it will be difficult to provide jobs, other than as teachers, for the college graduates. One solution for eliminating this enrollment problem is to restrict enrollment by raising the standard of admission.

Iraq, like other developing countries, suffers from three problems: (1) lack of adequate education for its youth, (2) jobs for the educated adults and (3) an excessive population growth rate.

These problems will be eased by industrialization of the country and reduction of the birth rate to a level which can be served by adequate education facilities and teachers.

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LITERATURE CITED

Al-Attiah, W. A. 1965. Economics of Iraq and the Arab Countries, Baghdad University Press.

Collver, O. A. 1965. Birth Rates in Latin America, Institution of International Studies, University of California, Berkeley.

Current Population Reports. 1964. Population Estimates, Series P. 25, No. 286, U.S. Department of Commerce, Washington, D.C.

Current Population Reports. 1966. Series P. 25, No. 338, U.S. Department of Commerce, Washington, D.C.

Current Population Reports. 1967. Series P. 25, No. 381, U.S. Department of Commerce, Washington, D.C.

Educational Statistics. 1960-65. Annual Report, Ministry of Education, Republic of Iraq, Baghdad, Iraq.

Folger, J. K. and C. B. Nam. 1967. Education of the American Population, U.S. Department of Commerce, Washington, D.C.

Gomez, E. 1961. "The Economics of Education," in Hughes, E. J., 1961, Education in the World Perspective, Harper and Row, N. Y.

Griffith, V. L. 1966. Fundamentals of Educational Planning, No. 7, UNESCO International Institutes for Educational Planning.

Hall, R. K. and J. A. Lauwerys. 1955. International Year Book of Education, World Book Co., N. Y.

Myrdal, A. 1961. "The Power of Education," in Hughes, E. J., 1961, Education in the World Perspective, Harper and Row, N. Y.

Poignant. 1967. "Fundamentals of Educational Planning, No. 2," UNESCO: International Institutes for Educational Planning.

UNESCO. 1963. Educational Studies and Documents, No. 45.

United Nations Demographic Year Book. 1963, 1966, 1967. United Nations, New York City, New York.

World Population Data Sheet. 1969. Information Services, Population Reference Bureau, 1755 Massachussets Avenue, N.W., Washington, D.C. 20036.

A PROJECTION OF IRAQ EDUCATION NEEDS

by

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Education is of prime importance to every country, whether it is developed or developing. It is especially critical for a developing country, such as Iraq, which has an abundance of natural resources, but is lacking in human resource investment of educated and trained citizens.

The objective of this study is to project the enrollment of students and the needs for schools and teachers for 1975 and 1985. The procedure was to project the population, by age and sex, using assumed annual growth rates, and then to apply assumed dropout and enrollment rates to estimate enrollment. The needs for teachers and schools was obtained by applying assumed teacher-to-student and teacher-to-school ratios.

Different enrollment rates were assumed for each grade level. At the high school and college levels, four different series were developed, giving high, medium, medium low and low estimates. At the pre-primary and primary levels, universal education was assumed.

The results varied between the high and low series, and by sexes. Projected requirements for the pre-primary and primary levels were much greater than could be realized even if the birth rate were zero because of the gap between present enrollment rates and universal enrollment. Projections at the higher levels of education are within reach if the growth rate in enrollment of the past decade could be doubled for the next decade.

It seems clear, however, that unless schools are built and teachers trained at least twice the current rate, there must be either a greater restriction on student entrance and higher standards of performance so as to limit student enrollment, or the number of potential students must be reduced by birth control or migration out of the country. A policy of limiting student enrollment will bring greater division in the country's

youth between the educated and uneducated. A policy of limiting the number of births consistent with available resources will make a reality of the promise of education for all who can use it to the benefit of themselves and their country.