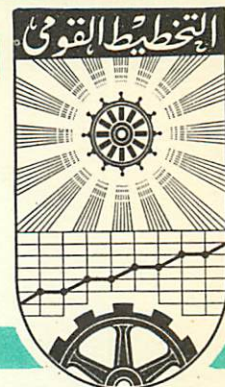


UNITED ARAB REPUBLIC

THE INSTITUTE OF NATIONAL PLANNING



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EDUCATIONAL STATISTICS
&
THE EDUCATIONAL PLAN
IN THE U.A.R.

by

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INTRODUCTORY

Our Arab society is rapidly evolving. Therefore, we are bound to develop educational institutes by re-adjusting the objectives of education, its curricula, as well as its methods, and by taking into consideration the fact that education is one of the inalienable rights of every individual his society is under obligation to fulfil, provided that this education is realistic, that it emanates from the needs of the nation, and that it pertains to actual life.

It is a fact requiring no elucidation that Arab consciousness yearly drives hordes of our children to attend school at various stages, and that their numbers are continually in the ascendant.

We, who inhabit the United Arab Republic, have a confirmed belief in planning in all fields. Planning, in the educational field, is compatible with the serious role, embodied in our responsibility for the formation of a new generation of self-confident citizens, who have faith in their future; a generation that is capable of carving its way through life without fear or hesitation. For this reason, we have designed our plan, and estimated our needs, in the light of our democratic, socialist, and co-operative society. This has necessitated our study of the developments of education in the past, to learn therefrom a lesson, so that we avoid pitfalls. We look forward to the future, as planned by our President Nasser, for our virile Republic. We have defined the objectives of our schools, institutes and universities, the establishment of which is necessary for the fulfilment of our social needs. We have also defined the standards we should attain to, in relation to each educational stage. The availability and distribution of educational services in the Plan base-year , throughout the governorates of the Republic, were verified, and checked up, as well as analysed. Furthermore, we have considered the expansion the situation requires in every educational service, or in the development of its curricula.

It was incumbent on us to consider in the first place the expenses required to cover this plan, especially the constructive aspects of it. In addition, we considered the means of securing the materials required for processes of construction and equipment. Equally observed, is the realization of equilibrium, in a manner compatible with the economic and social planning of the Republic.

Here, follows a brief analytical exposition, as well as a critique, of foundations and trends that constitute the basis of the Educational Plan statistics in the U.A.R., in the course of the next five years, starting from 1960-61 to 1964-65, in accordance with the available resources, upon which, we hope, we have laid down our Plan on sound trends and solid grounds.

(1) Concerning the Estimate of Freshers:

The number of all sorts of graduates and school-leavers, pertaining to various stages of education, depends upon the number of candidates admitted. To decide upon the number of candidates to be admitted depends

upon the general policy of the State, in relation to the stage of compulsory education, and upon the extent of the need for graduates and school-leavers, in relation to the rest of educational stages as well, in accordance with the anticipated expansion in the economic and social domains.

A- General Education:

(1) The Primary Stage:

In estimating the number of pupils pertaining to the primary stage, the admission of a certain percentage of children (from the age of 6 to 7), entitled to compulsory education, to the first year primary, was taken into consideration. A ten-year-Project was laid down, with a view to admitting to the first year primary, by the academic year 1969-70, all children at the age of compulsory education. It was estimated that the percentage of children, receiving compulsory education in the base-year -- 1959-60 would amount to 77.1%. But it proved later that this percentage was an exaggerated one, as it turned out in 1960-61 to be 74.% only. This percentage was derived from actual statistical studies conducted in that direction. It also proved that the percentage of children, receiving compulsory education, is higher in urban communities than in rural ones, and among males than among females.

It is beneficial, in this respect, to make use of the statistics of advanced countries, where it is a practical impossibility for the rate of admission, among children entitled to compulsory education, to become 100% ; the reason being that the existence of some mentally, and physically deficient pupils is an inevitability. Their mental and physical deficiencies hinder them from attaining to primary education. To illustrate this by examples, we should bear in mind that the percentage of admission among children of the age of compulsory education in the United Kingdom was 99.3% in 1957, and 98.8% in France in 1958.

In the light of this, it is possible to set forth an acceptable hypothesis, to the effect that the maximum participation rate for this age in 1969-70, would be 99%, and not 100%. And it is possible as well for the actual participation rate in the base-year, to rise gradually until it reaches the afore-mentioned maximum. This is apt to occur in every governorate; in urban and rural communities alike.

Concerning Estimating the Number of Children at the Age of Compulsory Education (from the age of 6 to 7):

According to the Education Plan for the primary stage in the U.A.R., it has been estimated that the number of children at the primary stage constitutes $\frac{1}{30}$ of the entire population. This is an approximate estimate, made on the ground that this section, receiving compulsory education, as observed from past consecutive statistics, equals this fraction.

It is preferable to have more than one estimate of the growth of population in the future, according to sex, and categories of five years. Such

estimates should be conducted by statisticians, specialized in this field, in the light of a number of hypotheses, connected with phenomena affecting population-growth, such as procreation, death, and migration, both external and internal. The five-year-categories could be divided up according to sex. It is possible, as well, to obtain more accurate estimates of categories of individual ages, including the age of compulsory education (from 6 to 7). For this purpose, some mathematical formulae, known as Karup King formulae, are to be applied. (1)

(2) The General Preparatory Stage:

The duration of its course is three years, after which, the candidate is qualified to continue studies at the general or technical secondary education level. The Five-Year-Plan of the U.A.R. is based on the admission to the general preparatory stage, in each year of the period of the Project, of a certain percentage, amounting to 20% of the total number of pupils, attending Form 6 primary. This total number forms the present rate of admission in the Plan base-year. This rate is taken for fixed in the course of coming years. The number of pupils, attending Form 5 primary, during 1959-60, is taken to be the number, 20% of which, is admitted to join the preparatory stage in 1960-61. After the deduction of 3%, the same 20% of the number, attending Form 5 primary, is admitted to this stage in 1961-62. The same principle applies to the number, attending Form 4 primary, to be admitted to the preparatory stage, after a 6% deduction, in 1962-63, to the number attending Form 3 primary for 1963-64 after a 9% deduction, and to that attending Form 2, after a 12% deduction, for 1964-65.

The rate of deduction, in progression, referred to, is caused by backwardness, exhibited by some pupils, during the course of study, or by some pupils, reaching the age-ceiling of compulsory education, before being promoted to Form 6 primary. It could be also caused by some other factors, that would render it necessary, when estimating, to leave such a rate out of account. This rate of deduction in each form, is determined in the light of the previous experience of the Ministry of Education, together with a consideration for the progressive growth of consciousness, by the lapse of time, among citizens.

It is preferable to estimate the number of those who finish the primary stage, during the years of the Project, starting from 1960-61 to 1964-65, when estimating the admission number to general preparatory education; after which to proceed to an estimate of the percentage of admission, relative to those who finish the primary stage in the course of several consecutive years in the past. The purpose of this is to benefit from the development of percentages in estimating future admission percentages. Here, follows the development of the

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- (I) The Karup King formulae are formulae, related to categories of early years (from 0 to 4), categories of later years (from 5 to 9), and the rest of other categories. They employ the breaking of categories of five years into categories of individual ages.

percentage of admission to the general preparatory stage, as from 1957-58 up to the base-year 1959-60 :

<u>Year</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
1957-58	29.9%	27.2%	28.9%
1958-59	28.0%	21.5%	25.8%
1959-60	33.3%	25.5%	30.7%

It is perhaps possible in the light of such percentages, to estimate a percentage more congenial than the one actually used, as we observe the rise of the general percentage from 28.9 % in 1957-58 to 30.7% in 1959-60. The rate of change in the percentage could be found out by applying the following formula:

$$r = \frac{t (R_t - R_o)}{t (R_t + R_o)}$$

r being the rate of change. R_t being the percentage at the end of the period t, and R_o being the percentage at the beginning, we find, by the application of the formula, that:

$$r = \frac{2(30.7 - 28.9)}{2(30.7 + 28.9)} = \frac{3.6}{119.2} = 0.03$$

Thus, it becomes possible to estimate the rate of yearly increase, until it reaches about 100%, in case the State's policy aims at admitting, to the general preparatory stage, all who finish the primary stage. Or, it might be assumed that the percentage will be fixed, after a certain space of time, to be brought up to a certain maximum of, let us say, 50% or more, according to the planned policy. Here, a deduction must be effected on the rate of change, by a fracture, compatible with the period of time, determined according to the assumption ($\frac{1}{20}$ for instance, if the fixity of the rate is assumed to occur after a period of 20 years.).

It is possible, here, to estimate the rate every five years, by the application of the following formula:

$R_{tt5} = R_t (I + r_1) (I + r_2) (I + r_3) (I + r_4) (I + r_5)$ as r_1, r_2, r_3, r_4, r_5 are the assumed rates of change as a result of the diminution of the rate, according to the assumption put forward. But since calculations, according to the afore-mentioned method, are intricate and complex, it is possible to use the following simple formula, as it gives approximately the same results.

$$R_{t+5} = R_t (I + r_3)^5$$

(3) The General Secondary Education :

Its purpose is to qualify the candidate for the successful continuation of his studies at universities, and higher institutes. The duration of the secondary education course is 3 years. It is attended by pupils obtaining the preparatory education certificate and possessing aptitudes qualifying them later for delving into study, and for leadership in all sorts of academic fields. The Five-Year-Plan for the general secondary education has been laid down in the light of the following considerations :

- a- The educational, economic and industrial renaissance prevailing throughout the Republic.
- b- Planning to universalize primary education in the course of ten years, starting from 1960-61 to 1969-70.
- c- The increase in popular educational consciousness, and the necessity of keeping abreast of it, in accordance with the needs of the nation.

Consequently, planning for this stage has been formulated on the basis of admitting 43.0%, 45.0%, 46.0%, 41.0%, 39.0% of the holders of the general preparatory certificate; the reason being a diminution of the number of candidates expected to pass the preparatory education certificate in the first two years, and their later rise in the last two years. It is preferable to benefit in this direction from the study of the percentage of admission extended to holders of the preparatory certificate in past consecutive years, so as to be able, besides the aforementioned considerations that shed light on the extent of anticipated expansion, at this stage, to estimate future admission percentages. The following percentages indicate the development of these admission rates, throughout the years starting from 1957-58 to 1959-60 (which is the base-year).

<u>Year</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
1957-58	49.1 %	46.3 %	48.5 %
1958-59	44.7 %	42.7 %	44.3 %
1959-60	44.0 %	44.0 %	44.3 %

We find, here, that the percentage, which is 44.3 %, is constant in the last two years 1958-59, 1959-60. So is the admission total, as the holders of the general preparatory education certificate in 1957-58 are equal in number to those of 1958-59.

With a view to expected expansion in higher institutes, training centres, and universities, needed to supply the trained labour required by the State, to encounter the projects, entailed by the Plan for Economic and Social Expansion, in which the investments involved are estimated at about 1697 million pounds, throughout the span of five years, from 1964-65, it is commendable that the extension of admission percentage should occur gradually, together with deciding upon a maximum percentage to be attained to by candidates from the holders of the preparatory education certificate (let us say 50%, after the lapse of a certain period, amounting to ten years for instance). Consequently, it is possible to determine the relative rate of increase in the period between 1960-61 to 1970-71, with the object of achieving

the assumed percentage. Together with this, consideration should be given to the number of those who finish the preparatory stage, according to the admission percentage, at this stage, of candidates from those who finish the primary stage. For instance, if we suppose that all those finishing the primary stage are admitted to the general preparatory education stage, the admission percentage to general secondary education must, then, be altered, so as to cope with the vast numbers that will finish the general preparatory stage. In other words, there has to be a relation between the numbers admitted to general secondary education and the admission policy adopted at the two earlier stages (the primary and preparatory stages). We should, as well, be guided by prospective expansion in subsequent stages (i.e. in higher education and training - centres), in the light of projects incorporated in the plan for the Economic and Social Plans and the distribution of investments among the various activities of the national economy sectors.

B. The Vocational Education (preparatory and secondary stages)

(1) The Vocational Preparatory Stage:

It is a completed stage. Its object is to produce moderately skilled workers. The distinguished among the leavers of this stage are allowed, after finishing it, to join the vocational secondary stage. The vocational preparatory stage is divided up into three sections: industrial agricultural and commercial. The plan for extending vocational preparatory services is based on the following principles :

- a- In a Markaz, whose population exceed 200,000, three vocational preparatory schools are to be established: (industrial, agricultural, and commercial).
- b- In a Markaz, where the population is not less than 180,000, two schools are to be established, imparting two types of vocational education, the one industrial the other, either agricultural or commercial, according to the environment and its needs.
- c- In a Markaz, whose population is not less than 100,000, an industrial school is to be established.
- d- To complete the opening of vocational schools for girls in all governorates.
- e- Expansion in opening industrial preparatory classes, attached to factories, on account of the success realized by this experiment.

Thus, we find that expansion in this type, as well as the standard of education, is based on the principle of the population census. The distribution of this type of education, throughout the governorates of the Republic, is also based on the principle of the density of population. Internal migration from one governorate to another might be a factor undermining this principle. Moreover, we should notice that the intimate relation between this type of education to the various types of activities, peculiar to

each governorate, was not taken into consideration; nor was the expected expansion and growth of each activity considered.

Thereupon, the policy of extending admission at this stage should be laid down on a basis of two types of study :

- a- The extent of expansion in each of the types of this stage.
- b- Justice in distributing these services, in accordance with what every governorate requires of each of these three types.

The upshot of this is to secure an absorption of school-leavers of all sorts, inside the governorate, or in places as near as possible to it, as workers cannot afford transport to distant areas, owing to the meagreness of their wages, that do not suffice to sustain them in their original homeland. The effect of this will be a consequential diminution of unemployment. To get acquainted with the extent of expected expansion in any type of this stage, it is preferable to do so on the basis of estimating the numbers required of pupils at this level, in each type of economic activity for the various sectors of national economy. The estimates should be made for a long period of time, not less than 15 years, according to a certain occupational structure for which required educational and training levels have to be defined. In addition, the required specializations have to be studied, within the framework of each of the types of education at this stage. The reason for this, is to avoid unrequired specializations, and to secure the availability of required but non-existent specializations. The materialization of such objective involves necessary preparation towards producing this class of workers, not only considering their required numbers, but also their qualifications and specifications.

As regards distribution of the types of this educational stage, it is preferable to conduct studies on the level of governorates, to get acquainted with the extent of trend in all sorts of economic activity (whether industrial, agricultural or commercial) during several past years, from the point of view of the percentage engaged in each activity relative to the total of the employed in each governorate, as well as conduct a study of the trend of this percentage. We must take into consideration the extent of expected expansion in each branch of economic activity, the distribution of productive projects, projects of different services throughout governorates, during the years of the plan, as well as the investments estimated for each of these projects.

In case of the non-availability of estimates of the labour force needed in the long-run, it is possible to take the distribution of projects of the Economic & Social Five-Year-Plan as a basis for such estimates. It is clear, of course, that the Five-Year-Plan embodies full data about the different types of labour force needed for the implementation of this Plan, together with the kinds and size of production...etc. All these data will keep to a great extent in estimating the scope of expansion and the types of education needed in each governorate.

It is preferable to conduct a study with a view to follow up the leavers of each type of this stage on account of the importance of such a study in finding out the extent of the suitability of each educational type in the labour market and the extent of the needed modifications to be effected and the system of education, so as to make sure that the leaver will conform to the qualifications needed for the labour - market. Such a follow up study will render us aware of the extent of response to the different specializations in each educational type, the percentage of unemployment and of those who are employed in the government sector, as well as the percentage of those engaged in the private sector.

A comprehensive survey must be carried out throughout all governorates to find out the existing numbers of leavers in each type of this stage in each governorate at the base year, before distributing the freshers among the governorates during the years of the Plan. A comprehensive survey of all governorates should be made for estimating the availability of each type of this stage of education in each governorate in the foundation-year, before distributing the admitted candidates among the governorates in the course of the years of the plan.

(2) The Vocational Secondary Stage :

It follows the preparatory stage, and its duration is three years. Its course is attended by either the holders of the general preparatory education or the distinguished among the holders of the vocational preparatory education certificate. The vocational secondary stage is a completed stage, and it drives at producing technically skilled labourers, among whom the distinguished can join universities and higher technical institutes. Which are divided into industrial, agricultural and commercial.

The Five-Year-Plan has been based on completing the opening of vocational secondary schools in the capitals of governorates, with a view to supplying the three vocational educational services, which is a sound principle, as it entails the provision of institutes of this standard in every governorate. But the extent of expansion, in each of these educational types, must be based, as we mentioned in dealing with the vocational preparatory stage, on estimating our needs for a long period, the kind of activity prevalent in each governorate, the investments estimated for every kind of activity in each governorate, and making use of the results yielded by the follow-up study of the leavers graduates, etc.....

It is worth remarking, in this connection, that since the duration of study in both the vocational preparatory and secondary stages is three years, and since each of these stages is a completed one, we should realize that the candidates attending Form 3 in the year 1959-60 are intended, after leaving school, to meet the needs of 1960-61, whereas the candidates attending Form 2 in 1959-60, are meant, after leaving school, to cover the requirements of 1961-62, and the candidates attending Form I in 1959-60 are intended to meet the needs of 1962-63. Consequently, the freshers admitted

in 1960-61, which is the first year of the plan, will be leading school in 1962-63, to meet the needs of 1963-64, the freshers admitted in 1961-62 to fulfill the needs of 1964-65, and the freshers admitted in 1964-65 to encounter the needs of 1967-68. Thus, it becomes obvious that it is necessary to estimate the needs for a sufficient period of time, so as to be able to estimate correctly the number of freshers to be admitted, with a view to realizing the required object.

C. Teacher training schools :

The holders of the preparatory stage certificate are admitted to this type of education. The duration of study, which had been formerly three years, was, later, extended to five years, as from the academic year 1961-1962. The following considerations are taken, when estimating admission to such schools, throughout the years of the plan.

- 1- The needs of the primary stage, throughout the years of the plan.
- 2- Estimating the necessary reserve of teachers for replacements resulting from death, pensioned superannuation, and transfer to other jobs.
- 3- Estimating the required number of teachers to replace colleagues whose academic standard falls short of the defined one, that has to be attained by teachers of the primary stage; as well as covering the present shortage.
- 4- Covering the needs of the Arab and Afro-Asian Countries.

We shall not be oblivious that no change in the number of graduates from these schools could be effected in the academic years; 1959-60, 1960-1961. The reason for this is that these numbers are already determined, being dictated by the number of those actually attending, in 1959-60 the three academic forms of the course of study. Therefore, expansion in admission should start as from 1960-1961, as the graduates of this year will be meeting the needs, arising after the lapse of five years, i.e. as from 1965-66; thus meeting the needed numbers of teachers for the stage subsequent to first Five-Year-Plan. This subsequent period starts from 1964-65, and ends up in 1969-70.

D. The Higher Education Stage :

It follows the secondary stage, and it is attended by holders of the general secondary education certificate, as well as by the distinguished among holders of the vocational secondary educational certificate. This stage includes :

Teachers Colleges and Higher Institutes :

Higher Training Colleges for both scopes.
Higher Physical Training Institute.
Higher Art Teachers Institute for both scopes.
Higher Training Institute for music for both scopes.
Higher Domestic Arts and Embroidery Institute.
Higher Training Institute for Industry.

Higher Technical Institutes & Colleges.

Fine Arts colleges.
Applied Arts College.
Higher Social Service Institutes.
Higher School for Languages.
Higher Industrial Institutes.
Higher Agricultural Institutes.
Higher Commercial Institutes.
Higher Dramatic Arts Institute.
Higher Institute for Letter Affairs.
Higher Institute for Financial and Commercial Affairs.

The Four Universities :

They are Cario, Ein Shams, Alexandria, and Assuit Universities. Concerning Teachers Colleges, and Higher Institutes, the next Five-Year-Plan for this type of education has been set up according to the plan of the different stages of general education (preparatory, secondary, and teacher training colleges and institutes of both sexes), as well as to the needs of educational departments for teachers of different subjects. It also accords with the needs of vocational education, at both preparatory and the secondary levels, for teachers of cultural subjects, in the light of budgets suggested by the Colleges and Institutes, that prepare teachers, for the coming five years, and in response to the needs of teachers by Arab countries.

Teacher Colleges and Higher Institutes:

The estimate of needs has been confined to the years of the plan, from 1960-61 to 1964-65, according to other educational stages plan, whereas freshers admitted, throughout the years of the present plan, will not meet, after graduation, the needs of this period. Therefore, estimating the numbers of freshers in the first Five-Year-Plan must be conducted according to the needs of the period after 1964-65. As to any shortage that might crop up throughout the years of the plan, it could be overcome either by recommending an increase in the number of freshers to be admitted to the Faculty of Education at Ein-Shams University, or by appointing holders of university degrees, specialized in the subjects in which the shortage crops up.

The estimate of needs for graduates from these colleges and institutes is the right basis for estimating the number of freshers to be admitted to them. This estimate of needs has been based on ratios, laid down by specialists in education, within the framework of their past experience, to which matter we shall be referring in detail later on, when we come to discuss the estimate of number of teachers needed for each stage. We just refer, here, summarily to the main outlines that should be tackled by a study of estimating the needs for teachers at different educational stages.

1. A definition of academic standards to be achieved by teachers of different subjects in each educational type, and at each stage.
2. Conducting a comprehensive survey in the base-year of teachers of every stage, in accordance with these academic standards in every subject. From such survey, we draw the following conclusions:
 - a) The basic standard of proficiency.
 - b) Qualifications that could be preserved by the pursuit of training.
 - c) Qualifications the holders of which could be of temporary use.
 - d) Other qualifications.

The last two sorts of qualification must be ultimately replaced by attainments to the basic standard. Their numbers are to be added to the shortage that might appear in each subject, and at each stage.

3. Estimating the needs for teachers required in every type of education, and its different stages.

4. Estimating the needs of other fields, employing graduates from these colleges and institutes, such as different departments in ministries of education, educational departments in governorates, and other departments.
5. Estimating the needs of these colleges and institutes for some of their distinguished graduates, that form a nucleus of the prospective teaching staffs.
6. Estimating a certain percentage for replacement (in cases of death, being pensioned, leaving service or transfer to other jobs, etc. ...)
7. Estimating of the needs of the neighbour countries.

It must be observed that estimating the needs should be conducted in relation to teachers of each subject, and to each type of the various stages of education. It must be also observed that we should estimate for a sufficient period of time (of not less than ten years), with a view to estimating the number of admitted freshers during the years of the present plan, from 1960-61 to 1964-65, to meet, after their graduation, the needs arising at the beginning of the end of the present plan 1964-65 or 1965-66, as the period of study ranges from 4 to 5 years.

The Higher Technical Institutes and Colleges:

Estimating the number of freshers to be admitted to these technical colleges and higher institutes, is based on the following :

1. Estimating the number of graduates from the Higher Social Services Institutes, together with the need of organizations and other quarters for this type of graduates, throughout the years of the project.
2. It has been taken into consideration that the fine colleges are to fulfill the need, of the state in architectural and artistic matters, considering that the limitations on the premises, and shortage of the teaching staff confine the number of freshers yearly admitted.
3. It has been taken in consideration to construct three new higher industrial institutes.
4. The construction of one higher commercial institute.
5. Establishing three new agricultural institute.

We realize from the above considerations that expansion at this stage was based on the estimates made by authorities responsible for this type of education in the ground of their expectations in the light of prospective expansion in fields of production. There, was no sound basis on which to make the estimates of admission of freshers to these institutes. It was only taken into consideration that the Economic and Social Development Plan would need these types of standard in the future. It was not possible to estimate the extent of required expansion in the number of freshers admitted at present. However, these new institutes were distributed among the different governorates of the Republic on the basis of supplying higher education services, and on the basis of correspondence between the type of institute established and the type of activity prevalent in each governorate, so as to render these institutes compatible with the environment in which they are constructed.

The sole basis of estimating the extent of expansion in each type of these institutes, and of estimating the number of freshers admitted, is the expected requirements of manpower needed by each type of activity, in the various sectors of national economy sectors.

If we look upon national economy, as containing three main sectors, namely agriculture, industry and services, and that each of these sectors contains a big number of economic activities, we realize the extent of the necessity of estimating the needs of such activities, as a basis for estimating the policy of admission of freshers in these technical institutes. Consequently, in order to estimate the number of freshers admitted, according to these institutes, there must be an estimate of the needs required by each activity in the various sectors of national economy. Such an estimate should be based on sound economic researches and an accurate basis to which we shall briefly refer later. We would also take into consideration that the freshers admitted from 1960-61 to 1964-65 will be graduated as from 1964-65, i.e. by the end of the years of the present plan. Furthermore, the establishing & supplying equipment of an institute to be ready for teaching require a period of time,

which is not less than two years. Besides, producing the necessary teaching staff requires a longer space of time.

Universities

The policy of admission to universities was based on the following principles:

1. An estimate of the holders of the general secondary education certificate in the coming years.
2. The percentage of freshers admitted to universities in relation to the yearly obtainers of the general secondary education certificate, on the basis of the average percentage of freshers admitted to universities, from the yearly holders of the general secondary education certificate, as well as on the basis of the average percentage of freshers holding the general secondary education certificate admitted to universities in the past three years. The percentage is estimated on this basis at about 50%.
3. Considering the percentage of freshers in every faculty, relative to the total number of freshers admitted to various faculties in 1959-1960, as a basis for estimating the number of freshers admitted to different faculties.

Thus we find that expansion in admission is a relative expansion, whose object is to conserve the percentage of those who join university education among holders of the general secondary education certificate, as well as conserve relative distribution among different faculties; a matter which is ⁱⁿ compatible with the trend of the various activities of national economy sectors.

What was mentioned concerning higher institutes, applies as well to universities. The policy of expanding university education, higher institutes, and non-higher vocational education must be based on an estimate of the needs of national economy sectors for trained manpower for a long and sufficient span of time. These needs must be the result of studies, and scientific-economic researches.

Moreover, it is useful to be guided by the findings of a follow-up study of graduates of higher institutes, and various faculties to know the extent of the need for each of these types, and the requirements of the private sector together with results that would shed much light on estimating the needs, hence, on estimating the admission policy. To elucidate the im-

portance of estimating the needs for trained labour force of various levels, as a basis for estimating the policy of expansion in and admission to universities, higher institutes, and vocational schools, we must briefly refer to the aim of studying, and estimating the needs at various levels, constituting the labour hierarchy, whose apex is formed by university graduates, followed by higher institutes. Gradually moving downwards in that hierarchy, we come down to the bottom, where we find the unskilled labourers. These needs represent the demand, whereas the supply is embodied in an estimate, made in the light of the expected availability, in the labour-market, of different levels at different educational stages, ranging from university graduates, to those who finish the primary stage, without joining the preparatory one. The estimate of the needs must be a long-term one (covering about 20 years).

The Period of Estimating the Needs:

As the educational structure in the U.A.R. is made up of a primary stage (lasting six years), followed by a preparatory stage (for 3 years), and a secondary stage (for 3 years), and as the course of higher education varies from 4 to six years, we find that the span of time, required for training any highly technically-skilled person, especially in scientific and engineering fields, reaches 16 or 17 years.

The Importance of Estimating the Needs:

The study of estimating the long-term needs of labour force aims at:

1. Setting the main outlines of technical and organizational changes, that should be effected on the economic structure of the State, to realize the required objectives.
2. Determining the distinguishing features and constituents of labour force needed for this technically and organizationally more efficient structure.
3. Determining the necessary number of candidates and graduates at different levels, so as to be able to change the present structure of the labour force, and to consolidate it quantitatively, and qualitatively, to achieve the desired objectives.
4. Passing some remarks on the possibilities and components of qualitative improvement of schools.

The Occupational Structure of the State:

The expected economic growth, throughout the long years will bring about a concomitant radical change in the occupational structure of the labour force, that would precipitate this growth. Labour-force jobs must be distributed according to modern bases of production-organization. As it is difficult to compare job-appellations in different sectors, according to the educational standard required for each job, it is more appropriate to divide up jobs on a basis reflecting the main outlines of job-graduation in production fields, in accordance with modern organizations.

Here, follows a definition of various jobs in the occupational structure, suggested for the employment-plan in Italy up to 1975, that could be resorted to for guidance:

- (1) The managers are of university level, in possession of a special administrative training .
- (2) The technicians, are of university education, together with a special scientific training.
- (3) The coordinating staff are of intermediate educational standard with a special training.
- (4) The superintendents are of common educational standard, with training suiting their type of education.
- (5) The skilled labour are of compulsory education standard, with vocational training.
- (6) The unskilled labour are of less education.

We should recall, in this respect, that at present a study concerning the estimation of the labour force needed to meet the necessary requirements of the U.A.R. up to 1985, is being conducted in conformity with a certain occupational-structure for the various sectors of economic activity.

Secondly: Estimating the Number of Candidates Enrolled in each School-year:

The importance of estimating the number enrolled in each of the different school-years at each of the different types of education, lies in estimating the number of classes necessary for each school year, which should be the basis of estimating the numbers of required teachers, and the costs needed for the plan.

From this, the extent of the importance of this process becomes obvious, hence the extent of accuracy that must be observed in estimating the numbers of candidates enrolled in each school year, becomes important too.

The basis of estimating the numbers of candidates enrolled in different school years is the percentage of passing exams, i.e. the percentage of promotion from one school year to the next. The adequacy of estimates depends upon the extent of the accuracy of these pointers. The main idea in the process consists in determining the numbers to be admitted to Form I (the freshers) in each of the educational types, according to considerations previously demonstrated in each one of these types, as well as, in a subsequent follow-up of the promotion of candidates from one year to another, according to the precise percentages of passing examinations in each school year. The result of this is to obtain the number of school-leavers in each type at different stages; hence, a consequential estimate of the number of candidates enrolled in each of the different school years.

Here follows an exposition of the passing percentages in each of the school years at different educational stages, which are taken as a basis for estimating the educational plan in the U.A.R. We shall discuss each of them, with reference to some necessary recommendations, that have arisen as a result of a follow-up of the execution of the plan, in the light of newly obtained data and information.

The percentage of passing exams varies in the same stage of different types of education. In government education, it is something different from what it is in private education. It even varies inside the same type of education according to sex. It is different in girls' schools from boys' schools. It also varies inside the same school, from one form to another; it is different in the first form from that in the second form, and so on. Here follows a summary analysis of the results of examinations in different forms at different educational stages

I. General Education:

(1) The Primary Stage:

In the primary stage, pupils are automatically promoted from one form to another, i.e. without sitting up for an examination. Every pupil is bound by compulsory education to remain throughout the whole primary stage (whose duration is six years, that is to say, from the age of 6 to the age of 12). Yet, automatic promotion from one form to another does not mean that promotion is 100%, as the cessation of the attendance of a certain number is inevitable, on account of deaths, and the leakage in attendance the forms of this stage.

This phenomenon was considered, in the First Educational plan, on the basis of the actual conditions prevailing in 1959-60, with the exception of Form 6, in whose case, conditions prevailing in 1958-59 were taken in consideration, the reason being that freedom of enrollment in 1959-60 markedly diminished the non-attending percentage. The non-attending percentage was estimated as follows:

- 2.7% of the pupils promoted from Form 2 to Form 3
- 4.5% of the pupils promoted from Form 3 to Form 4
- 6.7% of the pupils promoted from Form 4 to Form 5
- 13.0% of the pupils promoted from Form 5 to Form 6

Yet, it is preferable to study this phenomenon for a number of consecutive years, to estimate the rate of diminution that will help in formulating a would be appraisal of the situation of non-attendance.

A study was conducted covering this phenomenon in the period from 1956-57 to 59-60. The findings of this study point to its gradual diminution from year to year. The total percentage of leakage in attendance in 1959-60 reached about 5.1% in all the forms of this stage, and about 8.2% in 1958-59, against 11.3% in 1957-58, and 17.0% in 1956-57.

As death is one of the factors contributing to non-attendance, its percentage has been rectified on the basis of the expected mortality rate of both sexes, which is .4.9 per thousands for males, and .3.5 per thousands for females. And here, are the percentages of non-attendance after being redressed:

10.7% in 1957-58, 7.8% in 1958-59, and 4.6% in 1959-60.

In addition, the percentage of non-attendance for both sexes were studies in both government and private education. It was found out that the percentage of non-attendance was greater among females than among males in the government education, whereas it was the opposite in the private education. Here, follows a list of percentage of non-attendance among males and females in both government and private education:

School year	Percentage of Non-Attendance					
	Government and Private Education		Government edu.		Private Edu.	
	Male	Female	Male	Female	Male	Female
1957-58	10.0%	11.8%	5.7%	10.5%	32.9%	21.4%
1958-59	6.8%	9.6%	4.1%	8.5%	24.1%	17.5%
1959-60	4.1%	8.8%	2.0%	6.2%	21.4%	23.8%

The percentages of non-attendance in each of the Form in Government and private schools, for both sexes, were also calculated, from which it became ostensible that in 1959-60 the percentages of non-attendance were greater in the females case than in the case of males as regards all the Forms of this stage. The gulf between the proportions of non-attendance among girls, and non-attendance among boys, widens in the final Forms more than in earlier ones. The percentages of sneaking away in government education in each educational zone, were separately calculated.

The following is the percentage of non-attendance for both sexes in each form, in both government and private education, throughout the school year 1959-1960.

Form	The government education		The private education	
	Male	Female	Male	Female
Form 2	0.96%	4.03%	34.3%	24.7%
Form 3	1.6 %	4.6 %	19.8%	11.2%
Form 4	3.1%	6.8 %	15.9%	10.8%
Form 5	5.1 %	9.6 %	21.7%	16.2%
Form 6	10.2 %	16.8 %	-	1.2%

After studying the percentage of non-attendance for both sexes in both Upper and Lower Egypt, it was found out to be 3.6% for males, and 8.5% for females in Lower Egypt, whereas it was 6.5% for males, and 12.6% for females in Upper Egypt. The percentage of non-attendance also varies from urban communities to rural ones. On account of the strict regulations which are made to get rid of this phenomenon, we find that it is diminishing gradually. A vail could be made of this situation, for determining the percentage of diminution in this phenomenon, as well as estimating it in future.

2. The General Preparatory Stage:

The percentage of passing the general preparatory stage exams in 1958-59 was taken for the basis of estimating the number of candidates at this stage, in different school forms, throughout the years of the plan. These percentages are as follows:

<u>Form 1</u>	<u>Form 2</u>	<u>Form 3</u> (the prepar.
90.0 %	80.0 %	70.0 % certificate)

Thus, we realize that the estimates were made on the basis of passing exams in one school year only. This percentage was considered to apply to both sexes alike. It is preferable to take for a basis the percentage of passing exams, throughout several past years: (Let us say the percentage of the total of those who passed, relative to the total number of candidates sitting for the examinations, in the past three years, for both sexes, in both government and private education, in each of the governorates of the Republic). We were forced to use the percentages of 1958-59, as the duration of the course of study at this stage was 4 years, which was reduced to three years only, as from the school year 1957-58. This applies, as well, to the pupils of the first year in 1957-58. Hence, the non-availability of percentages which we can put to use.

The following is a summary analysis of the results of promotion exams. at the general preparatory stage in different forms.

Form 1: The percentage of passing exams ranges from 85.7 % to 92.0%. The passing percentage is higher in government schools than in private ones, and in girls' schools than in boys' schools.

Form 2: The passing-percentage ranges from 84.4 % to 88.3 %. It is higher in boys' schools than in girls' schools. Besides, it is nearly the same in both government and private schools.

Form 3: The passing percentage ranges from 90.2 % to 93.9 %. It is higher in girls' schools than it is in boys' schools. Moreover, it is higher in government schools than in private ones.

Form 4: (The general preparatory education certificate)

The average passing percentage, here, is 64.7 % in all educational zones. It is higher in girls' schools than in boys' schools, as it is 66.6 % in girls' schools, whereas it is 64.1 % in boys' schools. It is 77.3 % in government schools, against 69.3 % in private schools. We also find that this analysis varies from one governorate to another. At the distribution of admission, the admission percentage of government secondary schools, relative to that of private schools was observed. The distribution was conducted on the basis of 91.0% and 9.0% respectively. Freshers in the general preparatory stage were distributed according to these percentages: 75.0% for government preparatory schools, and 25.0% for private schools. The reason for this is the need of future expansion in this type of education for these private schools, so as to contribute to absorbing the expected increase of candidates, especially after 1962-63.

3. The General Secondary Education:

The passing-percentages in promotion exams, as well as in the general secondary education certificate, which were used in the plan were estimated according to the results of 1958-59, as follows:

<u>Form 1</u>	<u>Form 2 (literary)</u>	<u>Form 3 (scientific)</u>	<u>The general second. educ. certificate (for both sections)</u>
80.0 %	90.0 %	80.0 %	70.0 %

We also find that the percentage used is the same which is applied to both sexes, and to government and private schools alike.

It should be observed that used percentages should be based on passing percentages throughout several past years. From the statistical study of passing percentages in 1958-59, we notice that passing percentages, too, vary from government schools to private ones, from boys' schools to girls' schools, and from one school to another. It also varies from the scientific section to the literary one, and from one governorate to another.

B. The Vocational Education:

The passing percentage in all the school forms of all types of this education, in both preparatory and secondary stages, was considered to be 90.0%, which is an unsound assumption, as the passing percentage varies from one type of education to another. It should be observed that passing percentages are to be estimated, throughout several past years, for each school form, each type of this education, and at each stage, whether preparatory or secondary, as well as in each governorate separately.

The following is a brief analysis that embodies the results of the exams of the two stages of this education, 1958-59.

1. The Vocational Preparatory Stage:

The results of exams vary from one type of this stage to another:

	<u>Industrial</u>	<u>Agricultural</u>	<u>Commercial</u>
Form 1	83.7 %	84.7 %	83.0 %
Form 2	85.0 %	91.7 %	88.5 %
Form 3	79.2 %	88.8 %	66.4 %
(The Certificate)			

We find that the percentage in commercial preparatory education is higher in Form I, and Form 2 than in Form 3 & It is higher among girls than boys. Moreover, all these percentages vary from one governorate to another.

2. The Vocational Secondary Education Stage:

Here, also, the exams-results vary in each of the types of this stage. This becomes evident from the following:

	<u>Industrial</u>	<u>Agricultural</u>	<u>Commercial</u>
Form 1	91.6 %	88.1 %	78.0 %
Form 2	86.4 %	93.2 %	82.8 %
Form 3 (The Certificate)	74.8 %	86.4 %	62.5 %

The percentage in commercial boys' schools is different from what it is in commercial girls' schools. It varies, as well, from one governorate to another.

With a view to the obvious difference in passing-percentage from one form to another, one type to another, and from one governorate to another, and by comparing this varying percentage to the one used in the plan, which is 90.0% for all types, all forms, and all governorates, we can realize the extent to which the soundness of the estimates for the plan is accurate. It should be observed that such estimates should be made on the basis of several past years, and not on the basis of one single year. They should also be made for each governorate in separate, if our intention is to safeguard their accuracy.

D. Teacher Training Schools:

The passing percentage for this type of education was estimated, when preparing the plan, on the basis of 80.0% in the final class, and 90.0% for the rest of classes. This is also subject to criticism, on account of inaccuracy in the estimation of used percentages, for this type of education whose concern is to produce teachers, required for the primary stage.

A review of the results of examinations in these institutes in 1958-59 will render us aware of the following:

Type of Schools	Form I	Form 2	Form 3
General & Rural Teacher Schools for men	81.2 %	81. 1 %	74.5 %
General & Rural Teacher Schools for girls	82.1 %	87.9 %	68.9 %

We also find that the percentage, here, varies much from one governorate to another. While it reaches 100% in some forms in some governorates, we find it reaching 53.5% in some forms in other governorates. From the vast contradiction between the actual percentages for 1958-59, and the percentages used in the plan, it is possible to evaluate the extent of the importance of making the exact and necessary estimates, for every governorate, over several consecutive years in the past, in accordance with the above-mentioned considerations.

The Phenomenon of non-attendance:

Non-attendance, at the primary stage, is also known, in varying degrees, to all sorts of education at its various stages. We can trace the development of this percentage, from actual statistics available, in relation to the period between 1954-55 to 1958-59.

Type of Education	1954-55	1955-56	1956-57	1957-58	1958-59
General Prep.	5.4%	6.7%	5.4%	2.1%	3.0%
General Second.	5.2%	4.5%	3.6%	2.2%	1.4%
Industrial Prep.	15.1%	17.9%	7.9%	5.8%	5.0%
Agricultural Prep.	19.8%	13.9%	11.4%	8.9%	4.3%
Commercial Prep.	15.1%	2.6%	9.7%	3.0%	7.4%
Industrial Second.	23.6%	6.3%	1.1%	0.9%	0.8%
Agricultural Second.	3.2%	5.7%	2.9%	3.4%	4.2%
Commercial Second.	10.3%	8.1%	4.4%	2.0%	0.7%

These percentages vary from one Form to another, from boys to girls, from urban communities to rural ones, and from one governorate to another.

E. Higher Education: (Colleges and Higher Institutes affiliated to the Ministry of Education).

The passing percentage was estimated at 90.0% for all kinds of institutes, as well as for all academic classes. This is an approximate estimate, made in the light of the experience of supervisors over higher education; the reason being that most of the institutes of this stage are not older than 1957-58, with the consequential non-availability of sufficient data shedding light on percentages for this stage. Naturally, the application of a uniform percentage to all academic classes at various colleges and institutes, is out of keeping with actuality, as each kind differs from the other in matters of passing-percentage, and among various academic classes. We must obtain the passing percentages for each academic year each institute of college, as well as each specialized branch, at least for the last five consecutive years, the average of which has to be taken as a basis for estimating the enrolment students throughout the years of the plan.

University Faculties:

(The four Universities)

The passing percentage in various faculties is considered to be 70.0% From such percentage, it becomes obvious that its use for all faculties, whether, theoretical, or practical and in different academic years is a matter incompatible with what the case should be, as passing percentages vary from one faculty to another, and in different academic years. Here the estimation of passing percentage for each faculty should be made separately, especially because the number of faculties is so limited that it is possible to plan independently for each of them.

3. ESTIMATING THE NUMBER OF CLASSES REQUIRED:

This estimation is considered as one of the most essential processes in the educational plan, as it constitutes a basis for estimating the requisite man power, as well as the costs, involved in the execution of the plan.

The basic principle in estimating the number of classes in each type of education, at various stages, is to estimate the average density of a class, i.e. its capacity of holding pupils. From the actual numbers of pupils in each scholastic form, as well as its average - density, it is possible to estimate the requisite numbers of classes for each academic form; hence, the number of classes of each educational type and stage.

A ceiling for the average - density of a class in every educational type, at various stages, has been set up, by prominent educationalists and specialists, in the light of actuality, as well as their vast experience in this field, and inside the framework of financial possibilities, allotted to the plan, in a manner that would not be injurious to the educational level, and the required cultural standard. Here, follows the average - density in the various educational stages, which was taken for a basis of estimating the number of classes, required by each stage.

1- Primary Education:

Density, related to new classes required for absorbing freshers, is estimated at 48 pupils, throughout all the years of the plan, which the exception of the first year, whose density is 45 pupils. The estimation of average general density of the total number of the six forms of this stage, in the five years of the plan, (from 1960-61 to 1964-65), is as follows:

1960-61	1961-62	1962-63	1963-64	1964-65
43	45	45	45	46

against the general average-density, in the course of the years from 1956-57 to 1959-60, which is as follows:

1956-57	1957-58	1958-59	1959-60
41	41	41	42

The rise in the general average - density, during the years of the plan, compared with preceding years, is attributed to expansion in the absorption of pupils at the age of compulsory education, in accordance with the laid down plan up to 1969-70 and it is due, as well, to increasing costs involved in the execution of such plan. This situation has rendered inevitable such a slight rise in average-density. Promotion from Form to Form is considered as automatic in the primary stage. Thus, we find that the average-density of a class diminishes gradually from one school Form to the next, owing to the phenomenon of non-attendance, previously

referred to. This becomes evident from a survey of the following year, as from 1956-57 to 1959-60 :

<u>Forms</u>	<u>1956-57</u>	<u>1957-58</u>	<u>1958-59</u>	<u>1959-60</u>
Form 1	45	47	46	45
Form 2	44	45	46	45
Form 3	41	42	43	44
Form 4	39	40	41	41
Form 5	36	35	37	39
Form 6	35	31	32	30

This is compatible with the basic educational standpoint, consisting in the fact that early Forms are to be of high density, as the direction of pupils at this stage, is collective, whereas, later in, they require individual direction, in conformity with their inclinations and aptitudes. Thus, the density decreases, in a manner that enables the teacher to put into effect this objective of individual direction.

2- General Preparatory Education:

Class-density in general preparatory education was estimated at 34 pupils, for the sake of diminishing density at this stage, so as to render it less than what it is in the primary stage.

3- Secondary Education:

Class-density at this stage was estimated to be 32 pupils, which is less than its counterpart in the general preparatory stage. A law was passed, setting limits to this density; (law No. 211 issued in 1953 concerning the regulation of secondary education).

4- Vocational Education:

Class-density in all types of vocational education, (industrial agricultural and commercial) in both preparatory and secondary stages, was estimated at 32 pupils.

5- Teachers Training Schools:

Class-density in this type of education was considered as 30 students in the first academic Form, and 25 students in the rest of the Forms.

6- Higher Education:

Colleges and Higher Institutes (non-affiliated to universities):
Class-density in all of them was considered as 23 students in various scholastic classes.

It is obvious, from the above-mentioned, that the average density which is the basis of estimating the number of necessary classes for each stage, has been laid down on the ground of the "maximum" average, conceived of in the light of study and discussion conducted by prominent authorities on education. Such a maximum is dictated by educational conditions, as vast expansion is needed in educational audio-visual aids and other expenses, great investments, and foreign currency, at a time when most investments are directed into production channels, to increase the national income, and proceed further to double it, in accordance with the laid down plan for Economic and Social Development.

7- University Faculties:

These faculties do not follow the class-systems.

Fourth. ESTIMATION OF THE REQUIRED MAN POWER:

The educational process, like any other process, requires for its success administrative efficiency. This administrative efficiency increases with the establishment of the principle of specialization in societies fostering such efficiency. Administrative efficiency flourishes, in so far as the grouping of functionaries is arranged according to an administrative ladder.

The teacher is the pivot upon which the educational process revolves. He is not eligible for his vocation unless he assimilates the philosophic importance of his message, and delves into the depths of the national objectives of his country. Education, in itself, is one of the cornerstones of this message, the pupil being a farm which the teacher cultivates and attends to, with care and honesty, and the ultimate harvest being the common property of the State in its entirety. And since the philosophy of the Revolution is extended to develop education, it is inevitable to build up the teacher, whose faith cleaves to this revolution, and who transmits it, in his turn, to the hearts of the youngsters, with which their minds and thoughts are tinctured, and which is infused in the blood running into their veins.

Thus, it becomes clear that, besides expansion, educational planning drives at educating and building up present as well as future generations. This is apt to materialise primarily through the teacher, and the requisite media for the realisation of such objective. Therefore, the plan aims at developing the teacher, and raising his academic standard so as to render him eligible for educational stage at which he is apt to instruct. Requisite criteria and standards have been laid down, by which to judge the teacher of each type as well as stage of education. With this in view, a general survey of all teaching staffs has been completed, in conformity with the set-up standards, to estimate the unqualified, and arrange training programmes, designed to qualify them by means of training, whereas a plan has been laid down with the object of dispensing with the services of

those whose still remain unqualified, and shift them to other jobs, both administrative and clerical, provided that they are gradually replaced, in future time, by persons possessing the specified standards laid down for each educational type.

Therefore, special institutes, concerned with graduating teachers, were established, and developed to meet the requirements of each of the types of education, at every stage, in accordance with the required standards and qualifications.

To plan for institutes to graduate the required teachers, it was essential to complete an estimation of the requirements of man power, necessary for the march of the educational process, in all types of education, and at various stages, in a manner consistent with the realization of the objective of each educational type and stage. To fulfill this purpose, committees, concerned with each type of education, were formed by prominent specialists in the Ministry of Education. These committees laid down the standards required for each educational type, in the light of actuality, and their vast experience, so as to avoid any surplus that might cause some sort of disguised unemployment.

Here, follows a summary exposition of these standards, according to each type of education:

A- GENERAL EDUCATION:

(1) Primary Education:

The class-assignment given to a teacher at the primary stage is estimated at 1.2 . This estimation is based on the ground of allotting one teacher to every class, as primary education involves the system of class-mastership. The two-tenths lessons is assigned to specialized subjects, on the basis of actuality, and in the light of the weekly time-table, for all these specialized subjects, taught at different school Forms . Dividing the total of lessons of specialized subjects, by a teacher's assignment, we have the required number of teachers for such subjects. After conducting the necessary study in connection with the maximum assignment to be given to a teacher at the primary stage, it was found out that it was possible to assign to him up to 30 lessons per week. It was also found out that the above mentioned assignment gives an accurate estimation of the necessary needs for teachers required for the new classes. In this respect, we must observe the following:

- 1- In estimating the necessary number of teachers, replacements (against death, receiving pension, internal as well as external delegation, and conscription etc,..) must be taken into consideration.
- 2- Estimating the present shortage of teachers at this stage.

- 3- Estimating the number of teachers, who have proved, from the statistical survey, not to be eligible for teaching, (as their standard is below technical proficiency.)
- 4- While estimating the required number of teachers, it should be recalled that a certain section is promoted to be inspectors, assistant-inspectors, and headmasters, owing to the vast expansion that yearly occurs, consisting in opening new schools, as it is necessary to construct 650 new schools within the first five years.

Besides, it is preferable to estimate the requirements for both sexes, as this stage aims at extending the feminization of its teachers. The reason for this feminizing process is that it has been found out that women, teaching at this stage, are more suitable than men, as the child feels instinctive inclination towards them, on account of their tenderness and perseverance. It has been also found out that the percentage of school-mistresses in some governorates, teaching at this stage, reaches 70.0%, whereas it does not exceed 30.0% in other governorates, owing to the influence of customs and traditions. Therefore, we must estimate the situation in the base-year, relative to every governorate, and raise the percentage gradually, taking into consideration, the customs and traditions observed by some governorates.

General Preparatory and Secondary Education:

The class-assignment to teachers is estimated as follows:

1.7 at the preparatory stage, and 2.4 at the secondary one. These class-assignments are estimated by prominent educationalists at the Ministry of Education in the light of the status quo, the enforced study-schedule, the weekly teachers periods allotted to, and the educationalists to extensive experience of this field.

It should be observed that the estimate of the required number of teachers, for each subject, prescribed in the study-schedule for both stages, is to be conducted, according to the following:

- 1- The number of periods per week allotted to a subject for each form multiplied by the number of classes in the same form.
- 2- Calculating the number of lessons weekly, allotted to a subject in the various Forms.
- 3- The total number of lessons assigned per week to a subject in the various Forms, is divided by the weekly allotment of lessons to a teacher.

Thus, we can obtain the number of teachers required for each subject, and at each stage. From this, we notice the affinity of the study schedule,

and the allotment of lessons given to a teacher per week, with estimating the required number of teachers. Any alteration affected upon them will involve a revision of such estimates.

Perhaps, one of the matters that must be defined with precision, is the number of lessons assigned to a teacher per week. Such assignment has been estimated at both stages, as follows:

24 lessons for the preparatory stage, and 18 lessons for the secondary stage. Here, we should observe in estimating the maximum assignment of lessons allotted to a teacher per week, that it would not prevent him from performing his message in its entirety. These estimates have been laid down, according to the reports of technical inspectors in every subject, as well as the reports of various educationalists at the Ministry of Education.

The following considerations are to be observed.

- 1- Estimating the number of teachers, whose technical standard is below the one defined for each stage. We can make use, in this respect, of some teachers, whose standard is below the required one for the preparatory stage, to teach at the primary one. It is possible as well, to train those who are eligible for training, and keep them at the preparatory stage. It is also possible, to make use of those whose standard is not up to that of the general secondary education, but who might be fit for teaching at the level of the preparatory stage, and train the others with the object of qualifying them to remain at the secondary stage. The teachers who are eliminated as unqualified, should be estimated, and added to the necessary number of teachers needed.
- 2- Estimating necessary requirements, with a view to possibilities of promotion, or transfer to other jobs, being put on pension, deaths, delegation and conscription.
- 3- Estimation should be made according to each subject in separate.

B- VOCATIONAL EDUCATION:

This type of education is different from general education, as regards estimating the number of teachers required. The reason for this is the difference in the methods of study, according to the objective determined for each educational type and stage.

We find, here, that different types of teaching exist in vocational education. Cultural subjects are unified in all types, and at all stages, whereas vocational and practical subjects vary from one type of education to another, in a manner that secures the targets of the objectives

of each type. It had been possible to estimate the number of teachers required for each subject in each educational type, on the basis of the study-programme of cultural and vocational subjects, as well as on the basis of the schedule of practical studies and the actual assignment of lessons per week allotted to a teacher. From the total number of such factors, it has been possible to arrive at the following rates:

The Preparatory Stage

The Secondary Stage

Industrial preparatory: 3 teachers per class	Tech. Second: 3 per class
Agricultural preparatory: 1.7 teachers per class	Agric. , , 2.4 , ,
Commercial preparatory: 1.7 teachers per class	Commercial , 2.4 , ,

It has been also found out that these rates, when put into effect give the total of teachers required in each kind, and at each stage. This total is equivalent to the total of required teachers, in case their estimation is conducted, in relation to each subject separately, according to the study-programme, and weekly allotment of a teacher. It should be taken into consideration, provide replacements, to cover up vacancies created by death, being put on pension, promotion, and conscription etc.. in addition to replacements for teachers whose standard is below the one required for each stage, as well as for covering up the present shortage.

C- TEACHERS, TRAINING SCHOOLS

Class-assignment to a teacher, in these schools, has been estimated at 2.4. Such estimation is based on the prescribed programme, as well as on a teacher's weekly allotment of lessons, estimated at 18 lessons per week. Owing to the fact that this rate is related to the educational programme, it should be seen to it, to revise such a rate in case any change occurs in the programme of study. And as the period of study in Teacher's training schools has risen from 4 to 5 years, a consequential change has taken place in the programme of study. Hence, the necessity to revise this rate, in the light of the new programme, as well as the new assignment to schools. It should also be seen to it to estimate the standards, lagging behind the basic required standards, as well as present shortage, together with the numbers needed for replacements.

d- HIGHER EDUCATION.

The following estimations have been made for this education:

Industrial higher institutes 3.0 Agricultural higher institutes 2.4
Commercial higher institutes 2.4 Non-technical higher institutes 2.4

These rates are also based on the programme of the course of study, the lecturers' assignment, as well as that of the tutors per week.

As each of these institutes includes various divisions, each of these divisions, must have a complete teaching staff of certain standards. It must have a head (Professor), a sub-head (assistant professor), lecturers, and tutors. Thus, an estimation of teaching-staffs must be made, according to divisions existing in each college or institute. We should be guided, here, by the experience of some advanced countries, in connection with estimating the required number of the teaching staff.

It has been found out that 2 lecturers, and 4 tutors are needed for every 100 students. Such estimations will be acted upon in the next Five-Year Plan. We should not disregard estimating the needs for clerks and labourers, as they are of paramount importance in the process of execution. Clerks perform clerical and administrative work, which is of major importance in any school, as it enables the teaching staff to concentrate their time and energy to the educational process.

The labourers are of two kinds:

- A- Skilled labourers who play an important role, inside workshops, labs., and farms etc... in vocational education schools.
- B- Non-Skilled Labourers, who work as servants, and are responsible for the cleanliness of class-rooms, their maintenance, and preparation, together with other works that contribute to the flourishing of teaching processes. Therefore, estimates have been made setting the minimum of such kinds of labour force, required for each school, and at each stage. These estimates are made by technical and administrative specialist committees, in the light of their evaluation of each educational type, and their profound experiences.

Here, follow the estimations prescribed for each of the labour force referred to.

- 1- The clerks: are employed in case of constructing new school buildings.

PRIMARY SCHOOLS:

One clerk for each new school, whose pupils are up to 600
Two clerks for each new school, whose pupils exceed 600.

Preparatory and Secondary Schools, and Other Schools at the Same Level:

One clerk for each new school including pupils up to 500.
Three clerks for each new school whose pupils range from 500 to 1000.
Four clerks for each new school whose pupils exceed 1000.

Different Kinds of Agricultural and Industrial Schools:

One clerk for each new school whose pupils are up to 500.
Two clerks for each new school whose pupils exceed 500.

2. THE LABOURERS:

a- Non-Skilled Labourers:

In primary schools a servant is employed for every six classes, in addition to one servant for each school.

In Preparatory Schools of Different Types: One servant for every 5 classes, in addition to three servants for each school.

In Secondary Schools of Different Types: One servant for every 5 classes, in addition to 4 servants for each school.

b- Skilled Labourers:

Industrial Preparatory Schools: 6 servants for each school.
Agricultural Preparatory Schools: 5 servants for each school.
Industrial Secondary Schools: 10 servants for each school.
Agricultural Secondary Schools: 8 servants for each school.

5. ESTIMATING THE COSTS OF THE PLAN:

The establishment of new classes and schools involve capital-costs, as well as periodical costs.

a- Capital-costs include:

- 1- Buildings
- 2- Equipments (such as furniture, machines, tools, apparatus, and fixed instruments whose wear and tear takes more than one year.)

b- Periodical Costs:

Include all expenditures that yearly occur such as, salaries and wages, rents, water and electric light consumption, books and copybooks, simple tools whose wear and tear takes one year at the outside.

Besides, it should be observed that in the periodical cost of any Plan, in the first year of its execution, wages and salaries are calculated to cover 10 months, whereas, they are calculated in subsequent years to cover 12 months. This is due to the fact that schools open two months after the ratification of the budget.

The estimation of the costs involved in the First Five-Year-Plan, as from 1960-61 up to 1964-65 in the U.A.R., is based on the cost of each of the following units:

- 1- The costs of opening a class in a new government school.
- 2- The costs of opening a class to be attached to an already existing government school.
- 3- The costs of opening a class to be annexed to a supported private school.

These unit-costs are estimated, according to the afore-mentioned barometers of capital expenditures, & periodical costs on the basis of the average of actually existing costs, and on prices prevailing in the base-year 1959-60 in relation to each educational type. This might apply to all the stages of primary, general preparatory, and secondary education. But such procedure might fail to apply to vocational education, as it does not cover the several workshops attached to industrial education, farms and necessary labs. attached to agricultural education. This does not as well apply to higher education, as such education involves the use of amphitheatres, laboratories, and workshops.

Thereupon, we briefly refer to the fundamental aspects that must be observed, as follows:

1- Capital Expenditures:

a- Sites:

The space of the site is to be determined for each type of school, or institute. An estimation of its average costs, in the towns, markaz towns and villages, of each governorate, is to be made. The average cost of a site also varies according to its situation inside a town or outside it, whether the area is measured by meter or feddan.

b- Buildings:

It should be observed that an estimation of the necessary building costs is to be made for each of the following:
new buildings - buildings required to replace old and unsuitable ones - finishing the construction of buildings, already approved of, in the budget before the Plan.

As regards primary, preparatory, and secondary schools, together with teachers' training schools, estimating costs of what each pupil, or student costs in terms of building-portion, i.e. the number of surface meters in each class, hall, utility, corridor, and staircase, etc..., which is apportioned to him or her. In relation to schools of various types of vocational education, and institutes and colleges of higher education, estimating what a pupil or student costs, is based on his or her apportioned share in buildings, i.e. his or her portion of surface meters in labs., and workshops, together with his or her share in the above-mentioned items. The cost of a surface meter in each of these items is to be estimated. And from the total estimations of such items, the average cost of a surface meter is estimated. By multiplying this average cost by the total number of surface meters, apportioned to a pupil or student, we have what he or she costs in matters of building. It is possible to estimate the building cost, related to each type of school or institute, from the capacity of a school or institute to hold pupils and students, at its stage of full operation (the number of classes multiplied by class-density).

c- Equipments: These equipments are:

- 1- Equipments related to school or institute
- 2- Equipments related to class.
- 3- Equipments related to a pupil or student.

Together with this it should be observed that an estimation of an independent cost for each type of Industrial workshops in Industrial schools and institutes, is to be made. An estimation of an equally independent cost for each of the labs, farms, and other divisions, necessary for agricultural schools, and institutes, should be also made. It should be as well observed to estimate "the wear and tear period" for each type of these equipments.

These estimations must be conducted by technical committees, constituted by prominent specialists, possessed of experience, in each educational type.

2- Periodical Costs:

They include:

- a- Periodical costs related to school (such as salaries, wages, rents, water and electric light, cleaning materials etc...)
- b- Periodical costs related to class (teaching materials such as chalk, dusters etc...)
- c- Periodical costs related to pupil or student (such as books, copybooks, pencils, etc...)

Materials necessary for teaching each subject, as well as the periodical costs required for each school year, should be estimated, in accordance with the programme of study. This estimation is to be performed by technically specialized committees.

The Ministry of Education has prepared a detailed form, including all sorts of equipment, together with all the items of periodical expenditure. This form has been prepared after abundant study conducted by technical committees representing every type of education.

It should be observed to estimate the required costs, in local as well as foreign currencies. It was noticed that estimating the costs at the prices prevailing in the base-year, led up to the existence, at the time of execution, of a deficit in estimation that did not correspond to actual costs. The reason for such deficit is the rise in prices. Therefore, it is safer to estimate a reserve percentage as a safeguard against any rise in the prices, so as to avoid any deficit at execution.

It is of cardinal importance for achieving this purpose, to conduct researches, and studies to estimate the costs in every educational type and stage, as a guide to the estimation of the costs of the plan, and to guarantee its accuracy, as such accuracy is of paramount importance.

6. MISSIONS:

One of the important aspects, that must be included in educational planning, is to plan missions abroad for the purpose of completing aspects of specialization, and acquiring technically required experience. The plan is based on the desire to supply the technical requirements of the country, so that the scientific and intellectual revolution becomes compatible with the industrial and agricultural revolution.

In this plan, the following bases are taken into consideration:

- 1- The need of the country for specialists in scientific and literary fields, according to the priority of such need.

- 2- The number of those who are sent on missions abroad, their type of speciality, and the number of those who yearly return.
Besides the costs of the plan, as well as their distribution, have been estimated throughout the years of the Plan.

7. THE DISTRIBUTION OF EDUCATIONAL SERVICES AMONG GOVERNORATES:

In estimating the Plan, the possibility of yearly distribution of educational services among governorates, throughout the years of the plan has been observed. An assessment of the situation has been completed in relation to the share of each governorate of the U.A.R. in candidates admission, number of classes and teachers required, and capital and periodical costs. Thus, each governorate has adopted an educational plan, peculiar to it, in conformity with its circumstances, requirements, and its population-growth, but within the framework of the States General Educational Plan.

To judge the present distributing educational services, among various governorates, statistics have been indicating the number of pupils at the various stages is determined, in its relative proportion to every one thousand inhabitants of each governorate. Teacher training schools for both sexes, the aim behind planning for such schools being to secure the self-sufficiency of each governorate, in a manner that co-ordinates the distribution of classes inside its territory, on the basis of producing its required teachers, so as to put an end to the phenomenon of estrangement from one's native district, which was predominant in past eras. In vocational education, the Plan is designed to supply industrial schools in sectors where industry prevails, and where the constituents are contributing to the establishment of new preparatory and secondary vocational schools.

A SUMMING-UP

It becomes obvious, from the above-mentioned, that the Educational Plan, at all educational levels, are summarised of the following:

In regard to the primary stage, which is that of compulsory education, the Plan is designed to accord with the general policy of the State, as regards the time fixed for the admission of all children, entitled to compulsory education. In relation to the rest of educational stages, the Plan depends on the extent of the State's requirements of necessary labour force, on various levels, in the light of long-term developments, expected to occur in sectors of national economy.

As admission to higher education depends upon the number of those who finish the course of secondary education, thus constituting a certain percentage of them, together with the number, the training of which at

several vocational training-centres, is dictated by the exigencies of circumstances, we consequently find that the numbers of those who finish the secondary and vocational education stage, depends on the policy of admission adopted at the preparatory stage. Thus, we realize the necessity of inter-relating the various stages of education, when laying down the Educational Plan, together with the necessity of securing justice in the distribution of educational services among the inhabitants of all governorates, in a manner realizing self-sufficiency for each governorate, in matters of labour force required at various levels, according to its environment, as well as requirements.

In what follows, we refer to the chief considerations that must be observed:

- 1- Planning, throughout the Republic, is to be conducted on the level of the governorate, in accordance with its population, as well as the prevailing economic activity, and the special pointers, peculiar to it.
- 2- There must be in the Ministry of Education a particular unit, concerned with researches, which operates according to a certain programme of researches and studies. This unit is to include an adequate number of research-working specialists in education, with the object of coping with all the pointers mentioned above, which are considered the basis of a perfect Plan, compatible with the aims of the general Plan for Economic and Social Development.
- 3- The present situation must be adequately appraised, from the standpoint of pupils, classes, class-density, available teachers, and their standards, buildings, equipments, apparatus, labourers and servants etc., in all departments, as constituting the basis of the Educational Plan. Such an adequate appraisal must be made in the base-year, with the purpose of defining the situation, in relation to the start-off point, which will, subsequently, determine the assessment of the situation in relation to the target aimed at.
- 4- It must be known that planning is a continual process. Therefore, a yearly plan should co-exist with the Five-Year-Plan. Necessary modifications are to be made, according to whatever information and data is apt to appear to light. A change in admission number will lead up to a change in the numbers of those who are enrolled in other school forms, which will, subsequently, alter the number of classes hence, the required number of teachers, thus affecting institutes, concerned with producing teachers.

- 5- There must be a research-work on employment and unemployment among the educated, holding secondary or higher education certificates. . . The results of such a research-work will be beneficial in the assessment of the degree of expansion, or shrinking, that overcomes any of the educational types, at whatever stage, as this will shed illuminating light on the policy of admission in all educational stages.
- 6- Estimating long-term labour force requirements, at various levels, in accordance with an occupational structure, is considered essential in preparing the Educational Plan, at all educational stages and levels, so as to be, quantitatively, as well as qualitatively, in keeping with the requirements of the Plan for Economic and Social Development.