Tobias, GEORGE - Articles and speeches (1964)

Major Research Needs in Educational Planning

June 24, 1964

George Tobias

MAJOR RESEARCH NEEDS IN EDUCATIONAL PLANNING

In an Eden of abundance, precious little thought would be given to planning for the future. The essence of any kind of planning is to decide ahead of time how to share visible shortages, to anticipate and manage protests, and to allocate what is available among those claimants whose needs are most valid and urgent.

That process characterizes educational planning just as it does any other form of economic and social planning. Planning in education has to anticipate and accommodate, as well as possible, the competing demands for education which cannot all be met simultaneously. Standards and values appropriate to a given country need to be chosen from the wide variety of practices that characterize educational programs the world around. The demand for education and the cost of providing it rise far faster than do available resources. Allocating among the competing demands will require all of the research worker's skill if he is to furnish the educational planner with factual bases on which to make his choices. Too often the educational administrator is not adequately supplied with those research services that set out for him as plainly as possible the consequences that follow alternative decisions of educational coverage, content, duration, pedagogy, curriculum and construction.

Planning is the continuous process by which administrators and politically responsible bodies share shortages fairly, manage conflicts and balance requirements likely to be encountered with resources likely to be available. Planning demands choosing deliberately against designated parameters the requirements which are to be satisfied in full, in part, or later. Planning orders the sequence and degree in which resources are to be allocated against such chosen objectives, identifies unmet needs and deficient resources areas. It is one angle in the administrative triangle of planning, operations and review.

Research is the assembly and observation of known experience, the drawing of inferences which link up known occurrences in the past, permitting reasoned speculation on similar behaviour in the future in order to give a reasonable basis for administrative decisions needed in planning.

Educational planners and research workers would do well in the coming decade to see their task as that of helping administrators make the bread-and-butter, day-by-day decisions of resource allocation--by appraising and selecting most suitable practices from available data on varying educational standards. If more abstract and theoretical research inquiries must be deferred, it may be worthwhile to make the sacrifice in favor of clear and present needs. Certain areas of research of great appeal to the economists have been well plowed, and research workers might usefully turn to other areas of practical and immediate concern to administrators. For example, a great deal of talent has already been invested in testing cost-benefit ratios in education. Wide ranges of estimated costs and benefits have emerged, depending upon the accounting methods, statistical availabilities, taste and temperament of the research worker. They agree only that better-educated people earn more than less educated.

One might wonder if this field of inquiry deserves to retain so high a priority for research. Profound changes in the actual level of educational investment are not likely to result from further refined research in cost/benefit ratios. Pressure from parents and students to increase allocations for education will continue because the chance is always present that any given child might be the one who qualifies for the tremendous advantages which some educated persons are seen to receive from their education. Considerations of opportunity cost and shadow pricing simply are not real elements to the parents and school administrators who bring pressure upon fiscal authorities, or who allocate resources made available to the school system. Whether the realized net return from investment in education turns out to be 7 percent or 10 percent is of little importance to students, parents or to the community at large.

What problems are actually plaguing school administrators against which they must make plans, and which, therefore, deserve research priority? New problems emerge and old ones are accentuated as new institutions enter the education planning field. For example, the entrance of the World Bank into educational financing may inspire and require educational planners to direct their efforts to practical problems of immediate resource allocation. The Bank supports educational planning through its contribution and participation in the I.I.E.P. and with the United Nations family or organizations concerned with correlating human resources development with physical and financial resources utilization. At the same time, the Bank requires its borrowers to plan comprehensively to support the proposed educational investment, just as the Bank does for other forms of investments. In that sense, the Bank is a consumer of the research product that supports the educational plan it finances.

As research workers select standards for each aspect of the education process in a given country, they will be able to help the educational planners better to utilize available resources. This, in turn, will tend to increase the resources that may be made available by fiscal authorities who will, from the results of research, see better which areas of education are underfinanced.

What are the variables in educational practice that educational research should analyze to choose standards of cost and educational effectiveness? There follow a handful of examples, in no order of priority and by no means exclusive. They are chosen because few educational systems can afford to leave them out of their research catalogues, even though other local administrative problems may at the moment have more urgent need of research help.

(1) Coverage of the Educational System

Not every child in any educational system will be educated to the same level as every other child. In the first place, there simply are not enough resources to go around to invest equally in every child, irrespective of his background, motivation, environment, income and place of residence. The problem is to bring each child up to the optimum level of his own capacity to live his adult life fully. How does one choose which child goes to school and for how long? While social and political decisions ultimately should over-ride educational and economic considerations, what is the difference to society as a whole if we choose on the basis of intelligence in admitting children to school or keeping them there? What difference on the basis of the child's place of residence, family background, family income? In a society in which stringent restrictions on school attendance must be imposed, how can the research worker help the administrator choose the most "desirable" school enrolees to enter school and to progress grade by grade? Some students are going to be disappointed in any event--which student can best "afford" the disappointment? In which cases of education-denial or short-changing does society lose more?

(2) How long should a child be in school?

When should he start? At five years? Six? Seven? Eight? Different systems use different standards. When is a child most ready for the learning process that the school offers? Or should schools give daytime care, shelter, feeding and mother-substitution at very early ages for valid social reasons, which perforce reduces the facilities available for more intensive teaching at higher ages?

At what ages should the shifts be made from elementary to secondary and from secondary to college levels? How many years, really, does a child need to prepare for his career, including university? Fourteen? Fifteen? Sixteen? Seventeen? Different systems follow different patterns. What is the real difference in learning acquired if a child goes to school ten years from 7 to 17 as opposed to twelve years from 5 to 17? Research workers should be able to define, for a given culture pattern, how many years in school are required to equip a child with the information, work habits and attitudes that will most usefully serve him in his adult labor force and citizenship participation. Clearly, the answer depends in part upon what the community wants the child to get out of his school experience to be most useful in his future role. Does the child get enough out of school in, say, only six years total attendance to justify the expenditure of the state's resources by accepting him in the first place?

(3) What are the differences in educational yield according to how intensively the child is educated?

What, really, year by year, is the optimum student/faculty ratio? For how many hours per day can the student absorb and produce? For how many months per year? How well utilized is the teacher's, as well as the student's, time? How good are current periodic examinations to test the student's progress? If work measurement and the setting of production norms is standard, every-day procedure for the labor force at all levels of occupations, can't we determine usable norms for learning-achievement?

(4) Teaching Technique

The development in recent years of rich, new technical materials on teaching method and course content has, in a sense, delayed the installation of more economical and more efficient new methods, while educational research workers continue to debate which of the new techniques would be ideal. They are not to be blamed for hesitating--the financial and emotional investment involved in breaking with old pedagogy and installing new is so great that any new schemes adopted are likely to be frozen into the system and perhaps cannot be further altered without great trauma. In a sense, the best is the enemy of the good--improved techniques are not installed now simply because even better may be just around the corner.

In a situation of endemic labor shortage in the teaching profession, what does the planner need to know from the research worker in order to help him introduce more women teachers, for whom alternative employment opportunities are few, who are stable and loyal to the teaching professions, who have a knack with children and who, generally speaking, have few paid work opportunities.

At another level, what light can research throw on the problem of sending university students abroad? What are the real costs--including the cost of perhaps losing the graduate permanently to a more enticing job abroad? Have research workers thought through financial and technical questions of establishing regional universities instead of national or overseas university education?

(5) Content

What subject matter should the student be offered? What composes an acceptable and suitable curriculum--from elementary school through university? How challenging can the curriculum be without frustrating and depressing the child? How far removed from the current environment of the child? How much attention need be paid in underdeveloped countries to the social values of foreign learning just because it is foreign, and presumed to be of higher cultural value?

What about localization? Should the curriculum vary and, if so, to what extent, to accommodate local folkways, and local economic needs? Or does nationalism and group feeling require a standardized curriculum taught in standard ways throughout a country? Surely here an abundance of material is available to the research worker. The diversity and pluralism which characterize federal societies lead to a high order of localization, the results of which can be examined over a long period of time in such countries as U.S.A. Localization, or lack of it, also has characterized metropolitan school systems transplanted to colonial territories...this experience should yield abundant data for the research worker to winnow.

(6) Manpower Considerations

The school has the citizen for only a few years of his life. It receives him after he has acquired a social and personal awareness and it sends him on before he has acquired full professional competence or experience to perform fully as a citizen. Professionally, he matures as a result of his work experience and his training by, and observation of, his peers and superiors. What can the school contribute toward quickest and most effective occupational competence by the graduate? Experience in developed and underdeveloped countries alike, in professional, executive, technical and skilled employments demonstrates that the school makes its biggest contribution in the form of basic general knowledge to help the student more quickly to acquire productive professional competence.

If the school is to do its job best, research workers must supply the administration with much better information on what the labor market really demands. The techniques of job analysis and worker analysis have been brought to a fairly high level of accuracy over the past forty years. The techniques are in common, every-day use employing establishments, public and private, at all levels, including the topmost. Wage systems, licensing systems, promotion channels, transferability of workers, on-the-job training programs, executive development programs, are all strongly influenced by occupational analysis techniques in developed countries. Somehow this kind of information has not been communicated to, or is not being used by, the educational planner. He ought to know what pre-employment education and training a worker needs to perform successfully on a job, if the educational system is to be fully useful. What education have successful workers at a given skill actually received before entering on the job? What training before and after? How should the education be geared to the training and job experience which produces the effective practitioner?

From studies of such questions, the research worker will be better able to guide the educational planner as to the age at which the student can most effectively shift into specific occupational preparedness, and as to the kind of education that would be most helpful. It may very well prove, as most economists believe, that generalized education to produce "trainable" graduates is the best contribution the secondary school system can make to occupational readiness.

These questions become even more urgent, if more onerous, when applied to agricultural technical education where social, cultural, scientific and geographic considerations conspire to confound the educational planner who wants to give the student meaningful occupational preparation.

For the educator, technical and vocational education should encompass all of that education which equips the graduate for a fairly narrow, specific set of occupational activities. If training for the trade of machinist is technical education by this definition, no less so is training for the electrical engineer or nurse or school teacher or surgeon.

What is the obligation of the state to provide education that ostensibly fits the worker for a specific occupation? The state should assume responsibility for training only in those skills that are scarce in the community and for which the labor force has not yet had opportunity to build up a cadre of trained people. Technical education at best is expensive in time and in money; it disproportionately deprives other educational sectors of wanted resources. Hence, if we divert the education budget to technical education, we must be scrupulously careful to assure that it is needed and well used. Typically, a labor force builds up its own supply of skilled workers which, after reaching substantial proportions, forms a "critical mass" able to sustain and reproduce itself in a kind of chain reaction, producing additional workers through on-the-job training. Probably few countries of the world still need the school system to participate in training, for example, construction workers who use conventional materials. Employing establishments have historically developed and trained their own workers in the traditional skills and can continue to do so. The state may be well advised to reserve its technical education and training resources for skills new to the country and for which employers and the present labor force cannot quickly supply the training potential.

To the extent that the public school system must do part of the training for industry, it is vital that school output be closely correlated with industry's needs. Even the best school programs cannot equip graduates for the specific machines, tolerances, job discipline, tempo and work relationships to be found in the establishment that will employ the graduate. Yet the approximation should be as close as possible if the graduate is not to be frustrated, and if the employer is not to be disappointed. At best, serious industrial relations problems arise when technical school graduates go to work. If "A" and "B" graduate from elementary school, or from highschool, on the same day, if "A" continues his education for another four years, ostensibly to prepare for a specific occupation, while "B" immediately enters employment in a training stage for that occupation, four years later they will be very different individuals, not easy to set aside by side as co-workers. The school-trained lad will feel that his theoretical training is worth more than "mere" job training, while the job-trained lad will feel that his service and seniority with the given employer entitle him to superior retention and promotion rights. These attitudes are to be found among professional and technical workers just as they are among artisans.

It is worth noting that many underdeveloped countries over-educate their technical and professional workers. It is a common sight in underdeveloped countries to see scarce medical talent, for instance, kept in school unnecessarily long to acquire pure science, which may have little practical application, instead of being set to healing the sick. How many underdeveloped countries under-utilize scarce doctors by gathering them into hospital teaching centers, where they see few patients, in order to carry on the professional fiction that they are engaged in pure research and in the higher pedagogy. Underdeveloped countries too often utilize their expensively trained professional workers of all kinds for tasks which in developed countries would be performed by lower grade technicians--simply because the typical underdeveloped country has not trained technicians to support the professional cadres.

Forecasting

Manpower forecasting has developed a mystique combining necromancy with econometrics. Manpower economists are not soothsayers, better equipped to foretell the future than are other economists--they are simply specialists in drawing reasonable inferences from known present manpower data. For the typical underdeveloped country the most useful manpower forecasting grows out of an intense examination of the labor force's current skills. If we know the present composition and capacity of the labor force, we can infer how to expand labor force competence for the economy's short-run future needs.. Few countries have educationally significant inventories of their present labor forces, in terms of present labor force capacity and ability to move to other occupations with minimum retraining. Unimaginative application of macro-economic analysis tools, without regard for converting theoretical manpower demand into market-effective demand, has resulted in vast over-estimates of high-level manpower requirements.

Confucius wrote in the Analicts, "No man will go to school for more than three years unless he expects to be paid for it." Things have changed since Confucius wrote, but not very much. Let's keep in mind that students want to know and have a right to know where and how they can most effectively fit into the labor force of which they are soon to become a part.

(7) Fiscal

Educational research workers will serve educational planners well if they test with financial authorities the fiscal capacities of the governmental units whose revenues support the educational system. The educational planner needs to be better aware of the other charges that must be met from the community's budget and of the fiscal capacity of the community to support all of those charges. (And, incidentally, in examining educational charges as a percentage of fiscal capacities, one should take as a denominator the realized net fiscal revenue of the community. The Gross National Product is not the significant denominator because it cannot be captured equally in all jurisdictions--in underdeveloped countries a huge slice of the GNP is in the form of subsistence income which cannot be brought into the revenue stream.)

(8) Construction Problems

Education is the biggest single "industry" in most countries in terms of fixed capital, in the form of land, buildings and equipment. There is need for continuing research in economizing on school construction costs. Schools ought to be something more than shelters to keep the children out of the rain. They ought to have elements of aesthetics and grace to make the community and the student proud of the institution. They ought to be durable. They ought to be efficient machines for teaching. But they can meet all of these specifications, and still be built far more cheaply than they are in many parts of the world today. Huge savings and better buildings could be achieved by standardizing school construction, assuring that schools are properly designed for their purpose, and that materials, construction methods and maintenance are consistent with funds available and local conditions. Hence, here is another challenge for educational research.

(9) Statistical Improvements

To carry out any, or all, of these researches require consistent and dependable administrative, social and economic statistics. They may not be available in many countries today. Reliable statistics will never be available unless a start is made now by research workers to standardize and stabilize statistical definitions and collection methods.

Educational research workers should welcome the interest and enthusiasm in their product which is being evidenced on all sides. They should not suspect the suggestions made by economists, bankers and others not in the education profession proper but should realize that the greatest progress in any field comes as a result of competition and a persistent demand for improved services by consumers and the community at large. If the medical profession had remained as immune from public demand for reform, research and improvement, and as free of professional competition and rivalry as is the education industry in too many countries today, we would still be treating tuberculosis with gold elixirs and fevers with leeches.

~~Information~~
Speeches - Tobias
July 9, 1964
(circulated to Staff)

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL DEVELOPMENT ASSOCIATION

Major Research Needs in Educational Planning

(Paper prepared for the Seminar of the
International Institute for Educational Planning)

Bellagio (Como) Italy
July 8 - 18, 1964

Education Division
Department of Technical Operations
Washington, D. C.

June 29, 1964

Major Research Needs in Educational Planning

In the course of appraising applications for loans for educational facilities, the World Bank encounters circumstances in which one or more educational practices in the applying country differs from certain other countries. Oftentimes practices in a given aspect vary over a wide range as between countries. It is necessary for the Bank to apply its judgment, often after consultation with outside experts, as to the acceptability of a given country's educational practices in such cases.

While professional judgment will always have to be used in appraising loan applications, it would simplify and standardize Bank education appraisal procedures if the educational research community could review and analyze educational practice to standardize and narrow the range of best practices in educational systems on the basis of experience.

The elements which enter Bank education loan appraisal work are:

(1) Educational standards, including organization, management, content and product.

(2) Manpower considerations as related to economic and demographic factors.

(3) Fiscal standards in operating educational system.

(4) Construction and procurement standards.

There follow a handful of examples of areas in which standard practices might be developed as a result of research. They are arranged not necessarily in order of priority and are by no means exclusive. They are chosen because, while they are of interest to the Bank, few educational systems can afford to leave them out of their own research catalogues.

I. Content and Organization of Education

A. Coverage of the Educational System

Not every child in any educational system will be educated to the same level as every other child. There simply are not enough resources to go around to invest equally in every child irrespective of his capacity. The problem is to bring each child up to the optimum level of his own capacity to carry out his adult responsibilities. Some of the questions which need to be answered are: Does the child get enough out of school if he remains for less than, say, six years to justify the expenditure of the State's resources? What is the real difference in learning acquired of a child that goes to school ten years from 7 to 17 as opposed to twelve years from 5 to 17? What is the optimum student/faculty ratio? With work

measurement and production norms standard practice in industry, can research workers help determine norms for learning-achievement?

B. Teaching Technique

The development in recent years of rich, new technical materials on teaching method and course content has, in a sense, delayed the installation of more economical and more efficient new methods while educational research workers decide which of the new techniques would be ideal for installation. In a sense, the best is the enemy of the good--improved techniques are not currently installed simply because even better may be just around the corner or are not economical. Can research lead to quicker and more specific choices?

C. Content

The question of educational content contains political and social elements, but they nevertheless press upon the planner and research worker for recommendation. Some of the questions are: What composes an acceptable and suitable curriculum from elementary school through university? How challenging can the curriculum be without frustrating and depressing the child? How far removed from the current environment of the child?

Should the curriculum vary to accommodate local folkways and local economic needs? Or does nationalism require a standard curriculum throughout a country?

II. Manpower Considerations

The school has the citizen for only a few years of his life. It receives him after he has acquired a social and personal awareness and it sends him on before he has acquired full professional competence to earn a living or experience to perform fully as a citizen. Professionally, he matures as a result of his work experience and his training by, and observation of, his peers and superiors. What can the school contribute to a quicker and more effective acquisition of occupational competence by the graduate?

Research workers need to supply the school with information on what the labor market really demands. The techniques of job analysis and worker analysis are in common every-day use by employing establishments at all levels of skills. Wage systems, licensing systems, promotion channels, transferability of workers, on-the-job training programs, executive development programs are influenced by occupational analysis techniques in developed countries. The educational planner ought to know what pre-employment education and traininga worker needs to perform successfully on a job. What education have successful workers at a given skill actually received before entering on the job? What training before and after? How

should the education be geared to the training and job experience which produces the effective practitioner? What is the age at which the student can most effectively shift into specific occupational preparedness?

Research workers have much to contribute in manpower forecasting. For many underdeveloped countries the most useful manpower forecast may grow out of an examination of the labor force's stockpile of skills presently on hand. If we know the present composition and capacity of the labor force now in place, we can infer with reasonable precision the kinds of occupations which need to be augmented for the future. Yet few countries have educationally significant inventories of their present labor forces.

III. Technical and Vocational Education and Training

Public education systems have to assume a responsibility for training in those skills which are so scarce in the community that the labor force has not yet had opportunity to build up a cadre of trained people. Technical education is expensive in time and in money, disproportionately depriving other educational sectors of wanted resources. Typically, a labor force builds up its own supply of skilled workers which, after reaching substantial proportions, forms a "critical mass" able to sustain and reproduce itself in a chain reaction, producing additional workers through on-the-job training. Employers have historically developed and trained their own workers in the traditional skills to an adequate level of performance and may be able to continue to do so. Research should endeavor to establish those skills for which the State might reserve its technical education and training resources, and for which employers and the present labor force cannot quickly supply the training potential.

Many underdeveloped countries tend to over-educate their technical and professional workers. Scarce medical talent is often kept in school unnecessarily long to acquire knowledge of pure science which will have little practical application, instead of being earlier set to healing the sick. Many underdeveloped countries utilized their expensively trained professional workers for tasks which in developed countries would be performed by lower-grade technicians--simply because the typical underdeveloped country has not undertaken to train technicians to support the professional cadres.

IV. Fiscal

Research workers will well serve educational planners if they test with fiscal authorities the fiscal capacities of the governmental units whose revenues support the educational system. The educational planner needs to be better aware of the other charges that must be met from the community's budget and of the fiscal capacity of the community to support all of those charges. The whole issue of research for educational planning is how to make better informed choices in the allocation of scarce resources among educational claimants and, as between education and other claimants, for revenue. In doing

so, both capital and recurrent costs need to be accounted for and, indeed, they tend to have a reciprocal effect on each other. Fiscal research could well be directed to the subject of unit costs in its varying aspects. Can we, for example, establishwithin reasonable limits the unit costs--both capital and recurrent--for different types and levels of education and training? Can we find a basis for comparing unit costs from country to country or from year to year? Is it possible to find any correlation between levels of capital expenditure and resultant levels of recurrent cost? The difficulties of such research are obvious, but even modest success along these lines would be highly rewarding both to the developing country and the financing agency.

V. School Building Planning

School building planning is recognized as an integral and important component of educational planning. However, there seems to be a need for better knowledge and understanding of the role school building planning is to play within the framework of educational planning.

School construction is a special field that has been and is receiving due attention by professionals in many countries. Research is being conducted, though much more still has to be done, particularly in regard to climatic design factors, economic space standards and construction techniques, costing and cost analyses, etc. This research, however, is directed more towards improvements in the techniques of designing educational facilities rather than towards comprehensive educational planning.

What is needed is to establish the links between educational planning and school construction. The way to do this is to recognize the school building specialist to be an essential ingredient of educational planning teams and, by including this additional discipline, promote a better mutual understanding of the main problems to be faced and how they relate one with another. Two kinds of questions will have to be answered first, through collaboration from both sides:

(1) What is the role school building planning has to play in the process of educational planning? What are the relations of school building planning and other factors and components of educational planning? Specifically, what is the task of the school planner in support of the principle of educational planning and in the course of elaborating and implementing educational development plans?

(2) What impact do the principles and techniques of comprehensive educational planning have on school building planning? What are the problems in the field of school architecture that deserve particular attention in the light of educational planning techniques?

Only after these more general questions have been answered can an attempt be made to transform the practical proposition of educational planning into the practical achievement of educational development.

March 6, 1964

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL DEVELOPMENT ASSOCIATION

New Markets for Manpower Planning

(Statement prepared for presentation at the International Conference on Manpower Problems of Economic Development)

Lagos, Nigeria
March 2 - 13, 1964

Education Division
Department of Technical Operations
Washington, D. C.

George Tobias

George Tobias
February 1964

NEW MARKETS FOR MANPOWER PLANNING

The nearly universal acceptance of the importance of human resources development to general economic development has placed new and urgent responsibilities upon manpower planning. My theme is that the profession of manpower planning is sufficiently developed in its technical equipment to assume those responsibilities, to shift to a more active role in manpower administration, to switch from the research laboratory to practical application of its knowledge. Further improvements in statistical technique and theory will develop best as theory and practice serve as two hands washing each other--new principles will evolve from solving practical problems of manpower administration.

What is Manpower Allocation?

Manpower is people, humanity, society with all of its aspirations, needs and capacities. Manpower, considered as an economic resource, represents the aggregate of skills and attitudes resulting from education plus training that equips a labor force with the capacity to plan, organize and carry out economic processes--when properly allocated. "High-level manpower" includes the executives, administrators, technologists, professionals, technicians and long-trained craftsmen, the "produced producers." This is the "human capital" that must be matched with other forms of capital in a continuous process of allocation between alternative uses. Allocation of manpower between alternative uses takes place continuously because the supply is scarcer than the needs; a sharing of shortages, deliberately or accidentally, results. There is an allocation every time a student makes a career choice, a university changes its curriculum, an enterprise makes a capital commitment, or a basic wage decision is made.

What is a Manpower Program?

A manpower program provides logistics support to an economic development plan. If there is no economic development plan, a manpower program is isolated and indefinite. In the absence of a controlling economic development plan, however generalized and incomplete, a detailed manpower program may actually lead the labor force in the wrong direction. It should never be the responsibility of the manpower planner to determine his own directions and levels, but rather to act as a staff service to the

executive center responsible for the economic and political decisions of economic development. Hence, there must not be a manpower strategy independent of the development strategy of which it is only, however important, a part. Within that larger context, a balanced manpower program has seven aspects.

1. Recruitment
2. Deployment
3. Motivation
4. Education
5. Training
6. Utilization
7. Stabilization

The labor market is continuously and simultaneously affected by these seven impacts. There is no significance in the sequence in which these aspects are here set down; they occur in what physicists call a "time-space continuum." No matter where or how lightly we touch the labor market mobile, every one of these pieces in it jiggles.

Recruitment includes mobilizing and matching men and jobs--informing workers and employers of labor market facts; counseling workers who are changing jobs or students choosing careers; testing the worker's capacity against job requirements; determining the real requirements to perform a given task which, in turn, set the training and education appropriate to the job. Recruitment embraces the forecasting of manpower requirements and resources, analyzing present and historical labor force data, and relating the economic outlook with the population and labor force outlook.

Deployment of the labor force takes place to improve its balance as between areas, industries and occupations, to transfer and transform surplus workers so as to provide for growing economic needs and to give the worker a better chance at a job. Agricultural reform, area redevelopment, government activities to encourage new industries in old areas and social, economic and political problems of urbanization affect manpower development.

Motivation programs encourage and give incentives to workers to assume, learn and stick with new kinds of tasks. They provide programs of wage incentive and control and establish social values in support of economic development in lieu of those which inhibit economic progress--all the while avoiding compulsion upon the individual to work only in a given job and place.

The education aspect of a manpower program includes setting goals, requirements and resources of educated people, reviewing and perfecting school course content, and expanding and revising enrollment and curricula of schools in support of economic development compatible with other educational objectives. Assuring an adequate source of apt students and able teachers are parts of this aspect of manpower planning.

Training programs prepare the worker for efficient labor force participation with respect to a given occupation. Training programs require the support of the employer, the community, professional groups and trade unions.

Full utilization of the labor force involves the manpower planner in identifying problems of underemployment, planning of plant organization and layout, productivity improvement, job relationships and providing sufficient middle-level workers to support the highest skilled.

Stabilization of the labor force involves, for the manpower planner, programs of social protection, housing, community facilities, industrial relations and other activities that help reduce wasteful turnover.

A New Profession

The tools of manpower planning--even its terminology--were developed within the last thirty years. In 1936 there did not even exist an occupational dictionary to describe the jobs that make up the labor force.

Economic management of the labor market in Western Europe, the U.S., the Soviet Union and Japan was a necessary concomitant of World War II. Manpower economics discovered its tools and rules in the necessity to use scarce professional and skilled workers where they could contribute most to the war effort. (Practically every one of today's U.S. manpower practitioners of the appropriate age learned his trade in World War II. Many of them were brought back and re-treaded for service in the Korean War.) Many war-time experts, like Tommy Atkins, have spent the post-war years honing their bayonets and oiling their rifles, waiting for the call which is now being heard for manpower planning.

The U.S., Western European countries, India, Eygpt, Pakistan, Mexico and Nigeria, among others, now share a common awareness of labor market problems resulting from planned change.

Approximate and Experimental

All social and economic planning is approximate and experimental by its nature, and manpower planning is no exception. Plans are easier to conceive than to deliver. It is not possible to anticipate perfectly the manpower requirements and outputs by occupation, area and industry, to assure full utilization of the present labor force in balance with economic growth needs. Development plans flow from a series of successively closer, complementary estimates. Erected on partial and sometimes contradictory data, development plans are advocated on the basis of unproven social and political theories, assumptions and hopes. Proposed by social scientists, they are disposed of by politicians. Typically, funds for the plans' fulfillment are to be drawn from external credit sources, usually unnamed

or uncommitted, or from domestic revenues hitherto uncollectible or not yet written into law. The plans are to be implemented by private enterprise and by government administrators and professionals of all types who are not yet trained and who will always be in short supply. Many of the agencies supposed to carry out the plans either are not yet established or are sadly in need of reform. And yet, economic plans are being put together by--and for--capitalist and socialist countries, primitive and sophisticated societies, more developed and less developed economies, with high hope and with dogged determination.

A Servant of Administration

The three elements of administering anything are Planning, Execution and Control--planning is a staff service in support of administration. The manpower planner, in a staff capacity, anticipates questions that already plague the administrators, as well as those which the planner knows the administrator will encounter in the future. In addition, the planner seeks out answers to problems the administrator would never know that he has--but which the planner believes have to be tackled for successful manpower programs.

Here are a few areas in which economic development requires guidance from manpower planners:

Setting Employment Objectives

Within the limited financial and human resources at hand, a wide variety of targets for economic development present themselves. What kind of a country is wanted? Can the country afford the heavy costs of industrialization, especially if it risks stranding in a backwater the probable majority of the labor force which cannot be employed in industry? "Full Employment" is always an appealing objective. But full employment is meaningless unless the full employment is productive, with the employer free to choose and change his workers, with the worker free to choose and change his employment and to advance within the limits of his ability. The dual goals of maximum labor mobility and highest labor productivity may not be easy to reach simultaneously.

The choice between labor intensive and capital intensive industries cannot be resolved in purely economic terms of realized net return. Few societies can risk the political turmoil that results if only a small elite enjoys the benefit of highly productive investment, with the majority left in an undercapitalized status quo.

Furthermore, once high capital input industry is chosen, an inexorable arithmetic of compound interest sets in, with continued capital increments having to go to modernize and maintain both production and distribution. Yet, paradoxically, some of the greatest success stories in underdeveloped countries are those of the industries of smallest labor input. The greatest difficulties have harassed industries of high labor

use. Telephone service or highway transportation investment, for example, in which labor input after construction is extremely low, have shown high, trouble-free returns. The greatest difficulty has been encountered in such activity as irrigation and land resettlement. The reason is a high-level manpower reason--the shortage of executives and organizers for large-employing enterprises. This is especially true in agriculture where problems of agrarian reform, community development and directing a large, raw labor force have to be faced simultaneously.

Manpower is More Than Numbers

Preoccupation with forecasting of the size and composition of the labor force and of the kinds and numbers of occupation needed over the long term has given an unfortunate mathematical tone to the profession. It is not necessary here to recount the statistical methods employed in long-range forecasting. But it is appropriate to warn against methods which assume rigidity of the labor force and scientific precision in occupational requirements.

No element of production is so highly substitutable as is manpower. Tinbergen, among others, surprises many by going so far as to say that a given expenditure for education and training yields about the same economic advancement, no matter what the training and education might consist of. It is clear that, in many cases, one kind of education and experience can be made to fit the requirements of a new job in a short time, even at the highest technical and executive level. In developing employment objectives, planners should anticipate the greatest lateral occupational mobility, encouraging workers to shift, as opportunity and balanced resource allocation demands, from one activity to another.

The behavior of the labor market, more than the rigidly defined requirements of a job, determines the specification employers actually use in their hiring. Specifications change as the labor market changes. Americans over fifty years of age can recall from their own experience a time when Macy's did not hire salesgirls without university degrees (Hunter College preferred). Ten years later, any young lady with a discernible pulse was readily hired for the same job. Had the job specifications really changed? Not at all--the labor market had changed. What, then, were the "real" requirements of education and experience for the job. Typically, the employer (or his collaborator, the educator) insists upon the highest educational requirements at the time of hiring. But later, when wages are bargained, the experience and education, highly valued and much demanded by the employer when he hired the man, are of much less worth than the worker's proven adjustment to the job. It is evident that there is a great difference in pre-employment education (and experience) among successful men even in high-level occupations.

Equally, it is not true that an industrial process requires a fixed, rigid and invariable percentage of each occupation in order to operate efficiently. Nor can it be shown that an economy's industrial evolution follows a rigid and predetermined rate and pattern. There is

not a proven, mechanical relationship in the balance between occupations within an enterprise. Thus, if inter-industry matrixes mechanically ascribe for a given level of economic activity the specific kinds and numbers of occupations necessary, they are likely to be far off the mark. Experience shows that the labor market best meets production requirements (and increases the labor force's total skill level into the bargain) when it encourages the widest latitude of inter-occupational, inter-industry and inter-area shifts, with intensive on-the-job training after the worker enters the specific job.

Worker Productivity

The key to improving worker productivity is to facilitate shifts to new areas, industries, occupations, or processes, to equip the worker with new attitudes and attributes that raise his output and reduce his lost time and motion, and to do so as quickly as possible.

Improved work-organization within the employing organization assures that the highly qualified are kept working at the peak of their skill, assisted by technicians and helpers. The manpower planner can contribute to these programs by engaging the participation and support of the business community, trade unions, teaching institutions and government.

Manpower programs help by:

1) simplifying the job,

2) speeding the training on the job,

3) introducing technicians and other single skill practitioners to share the lesser tasks and

4) permitting each to work at the peak of his skill.

Social Adjustment

There is an important personal dimension to persuading the labor force to accept new techniques of production to improve output. Automated machines with electronic controls now have what amounts to a high school education. Machines may soon displace workers with less than a high school education in repetitive, mechanized manufacturing processes, and the machines work at a wage that will not support a family. The problem of introducing automation into a work force is a challenge to the manpower planner who must retain the cooperation and acceptance of those very workers whose jobs are disappearing. Technological indigestion shows up in the form of "feather bedding," not because workers do not want to work but because they do want to maintain their place in the labor force. The only place the worker can maintain, he feels, is the place that he has known. Manpower planners are faced with the challenge

of retraining, re-equipping workers for their new roles, of retaining their support, and of demonstrating the benefits, even though surplus workers may have to make personally painful shifts to new jobs.

Or perhaps automation, the nouvelle vague for organized worrying, has been overdone. Only relatively few kinds of large-scale and repetitive processes may ever achieve the economy of mass that automation promises and threatens. Servo-mechanisms may have to find their place in the battery of technology as has every previous invention since the wheel--and the human being's capacity will continue to play the central role in production.

Education

As early as the 17th century, the economic value of an educated and trained person was investigated by Sir William Petty, perhaps the world's first econometrician. He calculated that there were measurable differences in the output of individuals traceable directly to the preparation they had had for their jobs. But he did not stop there. He proved, to his satisfaction, in 1687 that the value to society of a trained mill hand was £90 per annum in England and only £70 in Ireland and that, for the advantage of both the Irish worker and English manufactory, migration should be encouraged. He also calculated the economic value of resettling in healthy areas workers who lived in the path of a plague. He found that the yield was 84 times the estimated costs of the investment. A sophisticated century later, Adam Smith was captivated by the cost-benefit ratio of investment in human capital. Indeed, he built a whole thesis on the need to husband resources and argued for improving labor productivity through training. David Ricardo concluded that workers' outputs vary in accordance with acquired as well as natural capacities, and that their rewards vary accordingly. In today's idiom, Galbraith puts it that "nowhere in the world is a well-educated person really poor."

Education is the biggest user of high-level manpower in both developed and underdeveloped countries. Indeed, it is the biggest "industry" in terms of employment, payroll and investment in plant. Problems of how best to supply and utilize teachers and administrators are present in all countries. Questions of how much education can be afforded, of what kinds, toward what labor market objectives are real and current everywhere.

Technical education, fitting workers only for single, narrowly restricted occupations, can be overdone. Theoretical education gives the worker greater mobility and adaptability to change his occupation and industry, and perhaps should be encouraged more than narrow single-job technical education. For the newly developing country whose precise future occupational needs are uncertain, too precise technical education is risky in that it may turn the young into very limited job specialists.

Not all highly developed countries educate their traditional-craft learners, such as carpenter, mason, etc., to secondary school level, nor do they need to do so. The traditional method of acquiring skill on the job should be counted on to supply the labor market for some years to come in most underdeveloped countries.

There is always the risk that long-term educational forecasts and estimates of skill requirements may mislead young people into blind alleys if patterns of employment and production change. In 1944, one of the most complex mechanisms ever developed in the U.S. was the manned heavy bomber--enormous investment in skills, materials and machinery for its production and use was anticipated for the future. The last of the heavy bombers is on its way to the scrap heap today, in 1964. What provision was made 15 years ago for missile production, space exploration, telemetry, solid fuel production? If our grandparents had acted with the greatest wisdom they possessed to assure us of useful occupations, they would have provided us with a substantial whaling industry for lighting oil, and hickory farming for wagon components, and the education to go with it.

Plainly, in educational investment, plenty of latitude should be left for human, social and personal attitudes. Keynes, in his "General Theory," put it this way:

> "If human nature felt no temptations to take a chance, no satisfaction (profit apart) in constructing a factory, a railway, a mine or a farm, there might not be much investment merely as a result of cold calculation."

The last element added to any investment appraisal is intuition--and that is more true in investment for education than anywhere else.

Training on the Job

Ultimately, every worker, both at professional and craft level, learns his job by doing it. The best friends of educational investment often weaken their own case by claiming too much for education. As a capital asset, as a tool of production, formal education and training in the classroom represents only one segment in the spectrum of human resources development. Formal education has done its job if it makes the student a "trainable" individual, more apt to perfect his professional and technical competence in the labor force than he would have been without such formal education. Preparation for effective labor market participation begins with the child at home and is carried no more than one long step forward by his educational experiences and the discipline of reckoning and reasoning acquired in the classroom. But it is from his colleagues and superiors that the worker ultimately acquires competence in his trade or profession.

Let's be clear about this--a surgeon must have had classroom instruction in anatomy; and yet doctors and surgeons equally must complete internships and residencies before they are ready to practice on the public. Lawyers must complete clerkships. Engineers pass through apprenticeships, under one name or another. Executives and administrators are "finished," and competence in making decisions and in directing a staff is acquired only after years of supervised control and on-the-job training.

The mark of a profession is the requirement that the practitioner pass through successive levels of attainment after entering the profession, based on the judgment of his peers, after training by his peers. If it is correct that individuals attain professional competence by doing the job after pre-employment education, then it follows that the employer has a key and vital role in manpower development. It is the reponsibility of the manpower planner to involve the employer deeply in carrying out that role efficiently.

The state's prime role in manpower training is that of exhorting the employing community, suggesting training methods, helping to choose those for employment as trainees. Some governments have found it desirable to encourage by subsidy or require by penalty that employers "overtrain"--by training above their foreseeable needs so as to enrich the general labor market. Many states operate training institutes of one kind or another for their own employment needs. But when the state undertakes technical and vocational education and training for other employers, experience shows that many mistakes can be made by training the wrong people for the wrong jobs in the wrong way.

Ultimately, an economy builds up for itself a supply of qualified workers in a given occupation large enough to carry out its production obligations and to train newcomers. Until that "critical mass" is attained, large enough to sustain a "chain reaction" that automatically produces additional qualified workers as a by-product of the process of production, the state may need to operate vocational training facilities as an auxiliary aid to employers' own training capacity. The state's role might well be restricted to the new technical occupations not found in that economy in earlier times. Not much is added by state training in the traditional crafts which have always been filled one way or another and which had better be left to the employer. On-the-job training equips the worker to work on a particular product of the employer, with the tools he will continue to use, within standards, tolerances and disciplines peculiar to the shop. Such in-training is focussed on the worker who has already made his job choice, has taken on a commitment, is working side by side with his fellows at a wide range of skills. Training by the state off-the-job can seldom reproduce the environment needed for such precise attainment.

Many countries enrich the compulsory military experience of their young people with training that has civilian uses--training in a real production context, supervised by qualified practitioners.

Training is endless--so long as a man works, he learns and teaches others at all levels, from the executive and scientist to the technician and foreman. How can we help to harness this abundant, free, universal training energy for human resources development?

Staffing

Many governments and lending institutions have gone through the experience of creating new industrial enterprises only to find them under-utilized or idle because the entrepreneur had not planned in detail for his manpower needs--especially at the highest levels of decision making, organizing, direction and supervising. Enterprises in the highly developed countries discovered only in the stress of full employment that human resources need to be planned for on a plant-by-plant, job-by-job basis, even longer ahead than material or financial resources. In many less-developed countries that lesson has yet to be learned. With the executives and technologists provided for, craftsmen can be trained or recruited or imported or borrowed. But if the cadre is not there, the enterprise will not run.

What are manpower planners doing to help employers grasp this fact? What methods of recruitment analysis, and timely hiring for training at top-most levels have been developed and installed by manpower planners? Why shouldn't every new project, financed by private or public banks, be accompanied by a detailed recruitment commitment for the high and middle level jobs--as a condition of the credit--with the source clearly indicated for each needed executive, technologist and technician, or a plan for developing him? And that plan for developing him should incorporate an educational development plan.

Agriculture

Probably 70% of the people in the world earn their living on the land. That percentage may not shrink appreciably within this century, despite all of the hopes for speedy industrialization. In many countries of the world, adding 200 calories per day to the average diet would be development enough. In addition, agriculture is going to have to supply an exportable surplus to generate foreign exchange, to buy the imports and to service the loans from which industrialization may grow. Furthermore, as technology is introduced to agriculture it carries in its train the improvement of skills generally, of technical awareness, of shop discipline, of a will to work and to work together, which combine to develop the techniques and skills and attitudes which industrial technology has to have.

Where is the farm leadership to come from? Often, underdeveloped countries are not able to offer the farm boy as high a level of education as the city boy. Many an extension worker has a city background. If that betokens his real dedication to the land, he should be welcomed. But if it simply means that the city boy could not find any place open to him for higher education than that provided in a mediocre agricultural school, he

may turn out to be only a technician without the complex of attitudes, traditions and social awareness that make it possible for him to work with farmers effectively.

Yet we ought not to try to keep farm boys exclusively on the land. Isn't there an inconsistency when manpower and educational planners demand more and better education to "take the youths out of the jungle of the city slums" if, at the same time, they are suspicious of education that might take the youth out of the jungle of rural slums?

Manpower programs, to supply the technical and societal leaderships for agriculture, will have to bring together the forces of economists, agronomists, health experts, sociologists, if rural life in underdeveloped countries is ever to be more than "dull, brutish and short" for that three-fourths of the world who will continue to live out their lives on the land. They might seek them out in cities as well as on the farm.

Development programs to increase jobs, especially in rural areas are an aspect of productivity improvement to use local labor. State-assigned purchasing on a preferential basis to a distressed area, and state construction projects carried out on a barter basis of food-for-labor have been successful in many countries to mobilize surplus agricultural labor.

Underemployment characterizes agricultural societies both because of the absolute redundancy of workers and because of seasonal idleness. The underemployed are more readily concealed in agriculture than in industry because in the latter there is a closer watch kept on the connection between prices, costs and wage costs. The greatest publicity has been given to labor market imbalances in market economies. But, the absence of statistics on rural (and urban) unemployment and underemployment in planned societies does not prove the absence of the problem. For example, one authority on the USSR has said,

> "the number of people working on a given farm is not the minimum necessary to till the soil, cultivate the crops and raise farm animals and poultry. Rather it represents the number of able-bodied collective farmers in the given cooperative. We cannot allow a state of affairs in which some members of the cooperative work, while others are deprived of the right to work." 1/

1/ N. S. Khrushchev, World Without Arms, World Without Wars, Book 2, p. 260, Moscow, 1959.

Wage Policies

If the manpower planner is to be successful in restructuring the labor market, he is going to have to use all of the implements at his hand. One of them is wage and salary policy, in which every government has an interest and most governments have a direct responsibility. Government wage policy directly affects a substantial portion of the labor force in every country and its effect ricochets throughout the economy. Of course, setting wage levels and perfecting wage relationships cannot be counted on alone to redirect the labor force in even the simplest of societies--too many non-wage elements enter into choice of career and choice of job. But it would be a mistake if the manpower planner did not use the wage device for its fullest effect, with caution. If wage movements can induce labor market shifts that are desirable, so can they produce undesirable ones. Indeed, there is almost a perversity in the way salaries rise for just those occupations that economic development wants to suppress--more tobacco salesmen turn up where we want more agronomists. Yet government administrators, or school teachers, or agricultural extension workers are not always underpaid in poor countries. High-level manpower in the underdeveloped country can charge a monopoly price which it cannot get in a country where skills are more abundant. In the United States, a secondary school teacher earns three times the per capita national income--in Tanganyika he earns forty times or even more. Which one is underpaid?

Rough and ready wage adjustments to clear the labor market only in a certain direction may generate just enough inflation to discourage development. Too often "correcting gross inequities" between occupations in a wage structure has been immediately followed by demands to "restore historic differentials" between those same occupations, chasing each other up the wage spiral to everyone's loss.

A Challenge

Here are a few typical questions representing manpower planning challenges on which administrators want help and advice.

What are the probable consequences, politically, socially and economically, of industrializing as rapidly as possible? What are the relative advantages of low labor input, high capital input activities to the political stability of the country as opposed to high labor, low capital input activities? Inasmuch as all underdeveloped countries are agricultural and will probably remain so for several generations, what are the employment implications of investment to raise agricultural output as opposed to industrial output? What place in employment objectives should handicraft, cooperative and cottage industry production have in order to raise the productivity of workers with the least capital input?

What are the employment, social and political implications of land reform in a country like India where more "rational" use of the land in Western terms would probably displace peasants from their tiny holdings? What are the implications of land reform for countries like Peru where the

end of latifundia would require vast training, development and redeployment of manpower into agricultural pursuits to cultivate the land thus released?

Where are executive, professional and technical personnel to come from in the short run? Shall we encourage employers to bring them in from abroad? How establish training centers for executive, professional and technical personnel--in each underdeveloped country? On a regional basis? In other more advanced but still underdeveloped countries?

Should new industries be located close to their labor supplies or close to their other resources? What are the cost problems and the social and economic implications of resettling the work-force near the production sites?

Does meeting the employment objectives require new institutions? Are employment exchanges needed? What is the role of the labor union in increasing productivity, acquainting new workers with industrial discipline, group production methods, occupational specialization, team operation, etc.?

Is there a necessary conflict between full employment and freedom of decision by workers and employers? What are the social costs of partially immobilizing the labor force in order to insure full employment (even at very low real wages which may be the consequence of redundancy, low investment and under-utilization)?

How can marginally attached workers, agricultural workers of low productivity and others be brought into the labor market? What social protection do they need during transition? Should their earnings be subsidized during transition by pay in kind rather than in cash?

These questions are simply illustrative. They are bound together and require answers that transcend particular narrow statistical approaches. In finding the answers and in getting them adopted, the manpower practitioner could well follow the advice of Benjamin Franklin for the diplomat who, he said, must have "sleepless tact, unmovable calm, and patience no folly, no provocation can shake."

April 10, 1964 ~~Draft - call me Tobias~~ ~~final after delivery~~

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROBLEMS IN INTERNATIONAL FINANCING OF EDUCATION

(Paper Submitted to the Unesco-Ecafe Regional Seminar
Bangkok, April 6-13, 1964)

Department of Technical Operations
Education Division
Washington, D. C.
January 3, 1964

George Tobias

PROBLEMS IN INTERNATIONAL FINANCING OF EDUCATION

There is nothing new in a country's seeking help from abroad to meet part of its educational costs. Such help has long been available in the form of loans and grants of money and of personal services from overseas. The first teaching missionary to arrive on a foreign shore represented a capital import for educational purposes. If, historically, the foreign contribution was in kind rather than in cash, it was none the less welcome and none the less a supplement to the recipient country's domestic budget for education.

Organized fund raising, usually private, for help to educate the backward peoples was known in the 18th Century. Many underdeveloped lands depended on foreign philanthropic foundations, especially for higher education, before World War I. Bilateral programs, government to government, were substantial even in the 1920's. Today more than 35 countries are helping to educate the children of other countries by supplying teaching materials or teachers or fellowships or equipment or cash in the form of grants and loans. They are joined by literally hundreds of philanthropic organizations and foundations which also export educational assistance. The coming of the United Nations, and especially of its Expanded Program of Technical Assistance, developed permanent machinery in a formal structure for collective educational assistance on an international basis.

Nor is there anything new in the demonstration that education and training are worth more to society and to the individual than they

cost. To be sure, not all of the statistical issues of determining cost-benefit ratios have been resolved, nor all of the proper accounting relationships confirmed. There is still room for experts to dispute whether the aggregated annual current costs of education in the U. S., for instance, are closer to 16 billion dollars or 65 billion dollars. Nor is there agreement on how much of the cost is chargeable to investment and how much to consumption. It is remarkable, nevertheless, and society should be grateful that the parents of the very scholars and experts now contending on the precise economic value of education acted, perhaps unscientifically, intuitively, emotionally, but nevertheless correctly, when they decided to keep little Johnny out of the labor force for yet another year and to send him back to school. Those parents, uninformed on the subtleties of opportunity cost accounting and shadow pricing, clearly made the right decision that led to greater economic output by their sons <u>because</u> of their education and training than their education cost.

Nor, again, is there novelty in governments' undertaking to meet the capital costs of educational plant and equipment by borrowing long-term money against a general pledge of government credit. Governments have long set aside or pledged their general credit (as well as specific revenue sources) for specific educational costs. In Britain and on the Continent the set-asides were often in the form of revenue-producing lands whose income could be used by universities. In the U.S., since 1862, productive national lands have been distributed among state universities (the land-grant colleges) as a source of funds for both their capital and recurrent needs, in exchange for the agreement that the

universities would give practical instruction at university level in agricultural, mechanical and scientific disciplines and in military training.

Borrowing to meet educational capital requirements is standard practice in the U.S. In each of the last five years, more than $2.5 billion has been borrowed by states and municipalities to meet the capital expansion costs of primary and secondary schools alone, with great additional sums being lent for the expansion of higher education facilities. Typically, such funds are raised in the ordinary money market, from investment banking institutions by normal underwriting procedures, standards and fees, and against the pledge of the general credit and general revenue of the borrowing municipality for debt service. U. S. municipal school bonds are as attractive to individual and institutional investors as are any other issues of the borrower; they compete successfully in U.S. money markets with other issues as to yield.

Thus these three concepts are not new:

that there is an attractive economic return from investment in education and training designed to satisfy labor market requirements,

that money to meet the capital costs of education can be raised by long-term borrowing against government credit, and

that such capital can be sought abroad as imported capital.

A New Departure

What is new is that governments are now undertaking coherent, balanced, articulated human resources development plans. Educational and training needs for economic development are being systematically determined to serve as the basis of international financing of education. Sums available for international investment in education are now much greater than in the past--but, paradoxically, the money may be harder to get hold of than ever before. The very size of these funds causes sharp pangs of apprehensive caution in those responsible for the money! Nothing in man's experience quite so much as big money greets its seeker with such maidenly shyness and demure insistence on reiterated reassurances that everything is going to turn out all right.

Education, already the biggest single employer in underdeveloped countries, may be expected to grow bigger. As countries become more affluent, or more industrialized, or both, more children are educated, at higher standards of instruction, to higher levels of education, with greater capital inputs per child, and lower student-teacher ratios.

But, in devising a manpower development plan, is it possible to anticipate perfectly the requirements and outputs by occupation, area and industry, and to assure full utilization of the present labor force so as to provide a balanced educational plan? At this stage of the game, such precision is probably not possible, but equally, all economic planning is experimental and approximate. Development plans flow from a series of successively closer, complementary estimates. Erected on partial and sometimes contradictory data, development plans are advocated on the basis

of unproven social and political theories, assumptions and hopes. Proposed by economists, they are disposed of by politicians. Typically, some of the funds for the plans' fulfillment are to be drawn from external credit sources, usually unnamed or uncommitted, or from domestic revenues hitherto uncollectible or not yet written into law. The plans are to be implemented by private enterprise and by government administrators and professionals of all types, who are not yet trained and who will always be in short supply. Many of the agencies supposed to carry out the plans often are not yet established or else are sadly in need of reform. And yet, plans are being put together by--and for--capitalist and socialist countries, primitive and sophisticated societies, more developed and less developed economies, with high hope and with dogged determination. Manpower planners can take comfort and courage from the company they share.

The IBRD and Education

In September 1962, Mr. Eugene R. Black, President of both the International Bank for Reconstruction and Development and the International Development Association, stated to his Board of Governors,

> "Nothing, I believe, is more vital to the economic progress of the underdeveloped countries than a well-rounded spread of education, and the Executive Directors as well as I, myself, have become convinced that here is a field in which the Bank might make a useful contribution."

In October 1963, to a similar audience, Mr. George D. Woods, present President of the Bank and IDA, stated,

> "In particular, I believe that we will have to do more to help create the facilities necessary to the spread of education.

> Education is, of course, a valued end in itself, but it is also of central importance in the whole development process. ...IDA, as you know, already has made one credit for school construction in Tunisia and is considering similar credits elsewhere. I believe it would now be appropriate for the Bank, too, to lend for school facilities of high economic priority."

These announcements represent trail-blazing ventures into international educational financing. To many people, the Bank/IDA's announcement of its readiness to examine proposals for educational development represents a profound change in the climate of educational financing, significant far beyond the probable sum of money that might be placed. Why should this be so?

The Bank's reputation assures it of an attentive audience in the financial community. Its announcement established the propriety of long-term capitalization of the costs of education. The Bank's own lending experience had demonstrated that economic development projects often cannot be devised, or if devised, cannot be efficiently operated without the trained executives, engineers, technicians, and administrators so sadly lacking in the underdeveloped countries and, indeed, not abundant anywhere. The only adequate answer is for the underdeveloped nations to educate and train their own nationals for these important jobs, because it is neither economically nor politically feasible to depend permanently on expensive expatriate personnel to manage one's affairs.

Without a home-grown supply of high-level manpower, economic projects suitable for Bank/IDA support continue to be difficult to develop. Typically, when the Bank/IDA undertakes to finance an industrial undertaking, it also makes certain that technical assistance and expert support of all kinds are provided so that the project does not

falter. The inclusion of educational projects in the range of its lending gives borrowers reassurance that education, too, would be supported to achieve its mission.

As one of its first undertakings in the educational field, the Bank joined with Unesco to establish an International Institute of Educational Planning with a financial contribution from the Ford Foundation to develop and supply educational planning techniques and methods to underdeveloped countries. With a distinguised Board of Directors to guide its work, the Institute is now reviewing areas where new research efforts, or new interpretations of older findings, can shed light on the pathway that educational programs in developing countries might best take. Also, in recent time, IDA has made credits available to Tunisia and to Tanganyika for secondary school construction. Other projects for educational loans and credits are under active and advanced consideration within the Bank and IDA. It is noteworthy that, coincidental with the Tunisia IDA Credit, the Bank also granted a substantial sum for the engagement of research architects and school administrators to devise school building standards for Tunisia, so that maximum economy and efficiency would be realized in future school building expenditures in that country.

Bank Loans and IDA Credits

The Bank/IDA expected that most lending for education would be to those very countries whose long-range foreign exchange earnings outlook was least certain. Thus, it was anticipated that, for educational financing, IDA funds for very long-term placement, at low or no interest, would be more likely to be called upon than would World Bank funds. IDA had been created to accommodate borrowers of the kind most urgently in need of educational expansion. IDA is able to help out the most needy while, at the same time, insisting on the most scrupulous adherence to strict standards of project execution. After all, it has to be so--in a real sense the IDA stands in a fiduciary relationship to countries who contribute IDA's funds.

The argument has been made over and over that both donor and recipient are better served if funds are supplied through such a multilateral agency as Bank/IDA. Bilateral aid is often provided for commercial or political advantage which can create educational institutions not ideally suited to the capacity of the borrower, especially to supply recurrent revenue.

All who knew the Bank's history felt reassured that it would not jeopardize its hard-won reputation for financial soundness by entering frivolously into a new and venturesome field. The nature of the Bank/IDA's sources of funds for placement alone would require it to maintain the most scrupulous economic review of educational activities of its member countries.

Bank/IDA flexibility and objectivity are most necessary in the field of education where absolute engineering standards do not exist, and

where the standards that do exist must be applied with practical discretion to situations particular to a given country. The Bank/IDA, in all its lending, tries to do more than simply supply funds--it has tried to build the environment and implant the attitudes which assure that the funds are well spent.

Thus, for example, the U.S. Senate Committee on Foreign Relations has concluded that it would be wise to entrust more of the U.S. Foreign Aid funds to Bank/IDA. "Those organizations are peculiarly fitted to test projects scientifically and objectively," the Committee said, "by virtue of a trained staff and long experience in appraising projects." Also, Bank/IDA follows projects throughout their life to assure efficient use of funds lent, requires responsible fiscal practices of the borrowing country, and acts without prejudice in providing discipline to the borrowing country. The Committee said further that because the Bank/IDA is known to have no ulterior motive, it can exert more influence over the use of a loan than is possible for a bilateral lender. It can insist that the projects for which it lends are established on a sound basis, and--most important--it can make its lending conditional upon commensurate efforts being made by the recipient country.

Now that the possibility emerges of lending Bank as well as IDA funds for education, the Bank's own obligation to protect its credit and the source of its own funds requires even more care in education project appraisal. The Bank's loans are made from capital, undistributed net earnings realized on earlier loans, or from the sale of its own bonds in the open money market. In any case, Bank management is acting as the steward of funds held in trust--equity, undistributed profits owned by its

stockholders, or funds supplied by bond buyers against the credit and portfolio of the Bank (a portfolio in which private lenders usually participate). Incidentally, Bank loans are made to countries whose foreign exchange earnings outlook is more promising and repayment in hard currency therefore easier for the borrower to make.

Over the years, Bank practice in other kinds of lending has come to be accepted as a desirable, if not always an attainable norm, by other lenders. Bank practice tends to set the standard of performance demanded by many other international lenders. If that precedent is followed in educational financing, Bank/IDA standards may become those adopted by other educational lenders. Here are some observations on those standards:

Foreign currency requirements are usually only a small part of the cost of education. The basic capital, and almost all the recurrent costs, will have to come from local resources. It is useless to lay out capital for education unless there is a dependable local source of revenue for operating expenses. Prospective lenders need to be reassured that operating costs can be met, and also that having funds earmarked for education will not cripple some other equally important effort of the government.

If education is eligible for especially long-term borrowing, it is on the ground that the full benefit from education is delayed until its products mature and until productivity in the labor market rises. However, it does not necessarily follow that every credit for education must be for 50 years if the borrower can repay it sooner. For example, before a 50-year loan for secondary schools would have been retired, a boy of 18

would have reached his peak of productivity and have declined into retirement at age 68, with his son and even his grandson well over the hump of their highest rate of productivity and still paying for Grandfather's education.

An educational project is going to have to make its own case convincingly to win the approval of banking institutions, which view education in terms of its economic and investment value. Education will have to compete for an allocation of resources, both internal and external, against lively, imaginative, more conventional forms of capital use, such as power, transportation and agricultural improvement. Educational borrowing will not only have to overcome the advantage of custom and familiarity which the other capital users enjoy but will have to show an attractive rate of return on its own.

Education Plus Training

The best friends of educational investment often weaken their own case by claiming too much for education. As a capital asset, as a tool of production, formal education and training in the classroom represents only one sector in the spectrum of human resources development. Formal education and training has done its job if it makes the student a "trainable" individual, more apt to perfect his professional and technical competence in the labor force than he would have without such formal education. Preparation for effective labor market participation begins with the child at home and is carried no more than one long step forward by his educational experiences and the discipline of reckoning and reasoning acquired in the classroom. But it is from his colleagues and

superiors that the worker ultimately acquires full competence in his trade or profession. A well-rounded human resources development program, to attract capital support from banking institutions, will have to include programs planned and carried out to assure the necessary mobilization, utilization, motivation and training of high-level human resources as well as their formal classroom instruction. Doctors and surgeons must complete internships and residencies; lawyers must complete clerkships; engineers pass through apprenticeships, under one name or another. Executives and administrators are "finished," and competence in making decisions and in directing a staff is acquired only after years of supervised control and on-the-job training. The hallmark of a profession is the requirement that the practitioner pass through successive levels of attainment after entering the profession, based on the judgment of his peers, after training by his peers. When the costs of long-term, on-the-job training are added to the costs of formal education and income not earned while the student is in school, the cost-benefit ratio of formal education obviously becomes smaller than only the classroom costs divided by the worker's later increase of earnings.

Training Plus Culture

At the same time, it is clear that education is both an integral part of a total culture and an item of consumption, highly valued for its own sake. It is in a real sense the objective as well as the engine of economic development. It is neither desirable nor possible to regard education merely in its utilitarian role of an instrument of production. We must balance utilitarianism against the civilizing function of education

and its contribution to preparation for citizenship. The tendency toward ever greater occupational specialization by the student at an ever lower age may one day defeat itself, since this process makes it more and more difficult for specialists to communicate with each other. In the underdeveloped countries, this prospect is still remote, but there is need now to decide the balance between traditional and vocational orientation of education. The traditional functions of education (to preserve the continuity of a civilization and to help develop cultural identity) cannot be ignored. On the other hand, if a society is to move into the Twentieth Century, too much emphasis on the past in its educational processes would be a mistake. Education should fit harmoniously into a chosen pattern of change, progressive enough to produce the technical leadership required, while at the same time not isolating from the mainstream of the national culture those who are privileged to receive higher education. The elite may acquire a modified professional outlook and new skills within one generation, but as human beings its members cannot readjust that quickly so as to skip many decades of slow evolution. Educational planners must blend the hard-headed and businesslike approach with sensitivity and imagination when they teach a people to swim in cultural, social and economic cross-currents.

An Aspect of Economic Development

International financiers will want to test the capacity of the educational organization to plan, innovate, manage and utilize what it already has. Every country in the world already has an educational system of one sort or another. A reasonable test of how well borrowed funds will

be utilized for extending the system can be made by examining how well present funds are being used for running the system. International lenders wish to examine not only internal controls, methods, standards and procedures of the educational system over its own domestically derived resources, but they will also want to make sure that education planning is properly related to the country's total economic and social development programs, both public and private, and that the educational system is flexible enough to accommodate to changing needs and new methods.

Educational projects suitable for international financing do not exist in a vacuum. They must be compatible with the total educational, economic and social environment. To win support, an educational project must advance the borrower's total development purposes.

Lenders will want to be sure that proper teaching and administrative staff are available for the operation of educational projects. Schools in many lands stand empty or are poorly utilized because the building program ran ahead of the supply of teachers and administrators to use the facilities.

Lenders will want assurance that both education as a whole and the specific project under review have a priority demand upon the borrower's own resources. Tests may be made of the extent to which the borrowing country is allotting its prospective gross national product to education, but what is more significant is the extent to which a government's current realized revenues are allotted to and spent on education. Another clear test of priority attached by the borrower to a given project is an appraisal of what kinds of desirable projects have been deferred to make room for the project under review.

Financial institutions will want to be satisfied that the borrower is providing a reasonable share of the total cost of a given project from local resources as an earnest of the borrower's claim of priority for the project. Educational projects, more than many other kinds, require more local and less foreign exchange costs--the fact that some fraction of local costs may be met by a lender does not, by any means, relieve the borrower of maximizing his own effort.

Banks wish to be assured that the capital to be put in place is not beyond the capacity of the borrower to utilize effectively, to complement with necessary operating costs, personnel, etc. Prospective borrowers are competing in capital markets--a lender will not wish to see his funds tied up in educational loans which cannot be effectively utilized because of a borrower's inability to provide operating expenses and staff, especially at a time when other worthwhile projects have been deferred or set aside to make room for the educational borrowing.

The Labor Market

Lenders for educational projects will wish to be assured that the students, to be turned out by the education proposed, are genuinely and urgently needed in the labor market to satisfy nondeferrable and irreducible requirements to carry out economic development. Education, the biggest single "industry" in underdeveloped countries, in terms of capital invested in plant and equipment, interms of payroll and in terms of employment, is engaged in the production and distribution of learning, at a price, for a market. Students will have to be trained so as to perform specifically those tasks that have to be done. Banks tend to look upon

real labor force need as the ultimate justification for borrowing for educational expansion.

Better management and utilization of the present labor force, by organizing the work in accordance with skills available, in many cases will reduce substantially future requirements for highest level manpower--with consequent reduced educational and training costs, higher productivity, improved job satisfaction and wider participation in economic development of workers with lesser skills.

How is the present labor force in the key occupations utilized? How productive? Is there lateral mobility in the labor force that permits workers to shift from one occupation to others, utilizing a similar level of attainment? What is the hiring employer's attitude toward the value of the education and training being given in schools and colleges? How mutually respectful are the educational authorities and the employing establishments? These are questions that lenders will want to be informed upon. (Incidentally, lenders have a continuing interest in assuring that economic projects in which they, themselves, have invested operate without impediment because of high-level manpower shortages; oftentimes, international lenders are most aware of manpower stringencies in a borrowing country, especially in executive and technological occupations.)

Nor are lenders likely, in the long run, to be impressed only because projects have tags attached calling them "technical" or "vocational" education. Technical and vocational education is simply that form of education which equips the student for a specific kind of occupational pursuit--medicine, law, engineering, executive management, communications techniques, metallurgical techniques, etc. Unless the

market is clearly and urgently in need of these "rifle-educated" students, lenders are not likely to be impressed with euphemisms describing the education as technical or vocational if it is unrelated to the realities of the labor market.

If education is an industry for the production and distribution of learning, its raw material is the student intake. If the educational project is to help economic development, the student intake must be suitable for the indicated occupations. Lenders will be interested to see the rate of drop-out and repeating of work by students as well as their performance on examinations to assure that they can be developed toward the occupational objectives proposed by the project.

Projects in Evolution

The perfect school system has not yet been devised--every curriculum in every school system represents the point at which come to rest a temporary balance between educational technique, level of culture and aspiration, and the facilities available for education. The financial community will wish to participate from the earliest stages with the responsible educational planners in order to assure that a given educational proposal is reasonably calculated to advance economic development without undue infringement of the other objectives of education which educationalists will wish to protect and preserve.

At the university and technical level especially, educational systems have a research and development responsibility to the community. They serve as research centers, centers of learning, centers of "organized worrying," to which the community's complex questions of all kinds

can be referred. Poor countries have few educated people. A few hundred educated persons in centers of learning, working together on the real and current problems of the nation, can make a great difference in the rate and direction of its economic growth.

The educational plant and equipment itself will surely come under the scrutiny of the lender who will want to assure himself that the physical plant is sensible and practical, while providing some elements of grace and intellectual environment. The structures must be "machines for teaching" rather than simply shelters against the weather. The structures ought to be sturdy--they ought to outlast the amortization period. Too cheap is not cheap at all. The standards of housing and amenities of students and of staff will be closely examined. Borrowers would be well advised to minimize the luxury in these two forms of expenditures, even though, of course, population distribution and the need to combat discrimination require many institutions to build housing and social centers for students. Moreover, the need to compete internationally for teachers requires certain amenities to be provided for the teaching staff.

Conclusion

We have come to the point where the benefits of education for economic development are universally recognized. The propriety of long-term financing of educational growth is accepted. The availability of external aid for such financing increases. It is necessary for the dialogue between educational borrowers and lenders to continue to grow closer and more confiding at all stages of educational planning, so that

the requirements of each will be the better understood by the other, so that their common objectives of human resources development are not obscured behind the historical distance between the two groups, or made inarticulate because of their separate esoteric vocabularies.