



McGraw-Hill Series in International Development

# Education, Manpower, and Economic Growth

## ***Strategies of Human Resource Development***

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*A Joint Project of the  
Industrial Relations Section,  
Princeton University, and the  
Industrial Relations Section,  
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as Part of the Inter-University Study  
of Labor Problems in Economic Development*

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## EDUCATION, MANPOWER, AND ECONOMIC GROWTH

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## ***Education, Manpower, and Economic Growth***

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## Foreword

THE BUILDING of modern nations depends upon the development of people and the organization of human activity. Capital, natural resources, foreign aid, and international trade, of course, play important roles in economic growth, but none is more important than manpower. In this volume, we have analyzed economic, political, and social development from the perspective of the education, training, and energizing of human resources. All studies of development recognize the importance of the human factor; ours focuses upon human resources as the point of departure.

This volume is a policy-oriented work. We are, for example, more interested in analyzing appropriate policies and strategies of human resource development than in estimating the returns on investments in man. Our book is written for and dedicated to those persons who are attempting to influence the course of development of modern nations, whether they be less developed or ostensibly advanced. This book was deliberately designed as a blueprint for action rather than solely as a scholarly academic exercise. Our objective is to present a generalized concept of human resource development which may be useful to economic planners and education and manpower planners, as well as to students of economic development and political and social modernization.

In Chapters 1 to 8 we have attempted a global analysis of human resource development in both quantitative and qualitative dimensions. On the basis of quantitative indicators, we have grouped countries into four levels labeled *underdeveloped*, *partially developed*, *semiadvanced*, and *advanced*. For each level, we have analyzed qualitatively the problems of

education and training faced by the typical or average country and have outlined a "logical" strategy for human resource development within the context of prevailing economic and political pressures or imperatives. And in so doing, we have attempted to show the relationships between human resource development and economic growth. In Chapters 9 and 10, we deal specifically with the procedure, processes, and methods of integrating education and manpower planning with programming for general economic and social development.

This book is based upon many years of study, travel, consultation, and experience with problems of human resource development in about thirty-five countries, ranging from the least developed to the most advanced. It also draws heavily on unpublished manpower and education surveys to which we had access because of our work with various international agencies, as well as on ten essays which are to appear shortly in a book of country studies which we are editing as a companion volume.

This book and the forthcoming volume of country studies are projects of the Inter-University Study of Labor Problems in Economic Development, which is a cooperative research enterprise of staff members from the University of California (Berkeley), Harvard, Princeton, and M.I.T. in association with colleagues in other institutions in this country and abroad. The Inter-University project has been financed by the Carnegie Corporation and the Ford Foundation.

Many of the concepts in this book have their genesis in earlier discussions and collaboration with our other two colleagues on the Coordinating Board of the Inter-University Study: Clark Kerr and John T. Dunlop. At various points, we have used the concept of elites which was presented in our joint work: *Industrialism and Industrial Man*.<sup>1</sup> And we have had several lively discussions with them on the outline and major arguments of this book. They, however, are not to be held responsible for many of the policy proposals which we have dared to advance.

During our academic year as Fellows at the Center for Advanced Study in the Behavioral Sciences at Stanford, California, in 1962-1963, we benefited greatly from informal discussions with our colleagues and from participation in a weekly seminar on "Processes of Directed Change." We are grateful to John G. Gilbert, of the Center Staff, who programmed our quantitative analysis which is presented in Chapter 3, and to Irwin Solomon of UNESCO for strategic help with statistical data. We wish to express particular thanks to the following persons who read parts of the manuscript and made very helpful comments: William G. Bowen, Evsey

<sup>1</sup> Clark Kerr, John T. Dunlop, Frederick H. Harbison, and Charles A. Myers, *Industrialism and Industrial Man: The Problems of Labor and Management in Economic Growth*, Harvard University Press, Cambridge, Mass., 1960. A revised edition was published by the Oxford University Press, New York, in 1963.

D. Domar, Paul R. Hanna, John H. Smith, Eugene Staley, and Ralph W. Tyler.

The manuscript drafts were typed and retyped many times by Mrs. Hildegarde Teilhet and Mrs. Jean Pearce at the Center. Miss Nellie Offutt and the staff of the Industrial Relations Section at Princeton prepared the manuscript for publication. We also wish to express thanks to Mrs. Nancy Myers and Mrs. Adeline T. Vermilya for extensive bibliographical research, and to Nancy Myers for preparation of the index.

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*Frederick Harbison*  
*Charles A. Myers*

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# 7

## **Concepts of Human Resource Development**

MOST NATIONS TODAY are development-minded. The less developed countries which have been poor and stagnant for centuries are in a state of revolt against poverty, disease, ignorance, and dominance by stronger nations, and they are no longer disposed to entrust their future exclusively to the forces of the market, the whim of nature, or the judgment of colonial rulers. The advanced countries likewise are committed to growth, and the more rapid and spectacular the better. Their aspirations, indeed, are no longer earthbound, but extend as well to the exploration of outer space and possibly even other planets. This almost universal quest for forward movement is in essence a revolution which has no precedent in history. It is fired by rising aspirations for economic, social, and political progress, and it is based upon the optimistic conviction that man, in this century of science, can move forward by leaps instead of steps.

The slogan of this world-wide revolution is *development*, and like other revolutionary slogans, it has various meanings to different groups. In many countries development means industrialization. In some it symbolizes the achievement of independence, politically and economically. In others it encompasses opportunity for education, the construction of a huge dam, the building of skyscrapers, steel mills, and television networks in once primitive lands, or even the creation of a new nation's capital in wilderness. Development may also mean movement from rural to urban areas, and it certainly includes the achievement of instantaneous, world-wide communications and jet airplane travel.

The sociologists and political scientists tend to think of development as the process of modernization, and they concentrate their attention pri-

marily on the transformation of social and political institutions. Economists tend to equate modernization and development with economic growth; they are concerned primarily with such matters as savings and investment, national income, productivity, and balance of payments.

As economists, we are first of all interested in economic growth. But as peripatetic observers of many societies, we are convinced that the world-wide aspiration for development is much more than a desire for economic progress. It is a quest as well for status, prestige, recognition, and social and political modernization. When one analyzes development exclusively within a framework of economic criteria, therefore, he ignores the limits set by the other goals of the society. And if he takes "everything" into consideration, he will fall into a quagmire of confusion. It is necessary, therefore, to look at development from a "point of view." In this volume, we have chosen human resources as our principal concern, and we shall analyze the broader aspects of development from this perspective.

Human resource development is the process of increasing the knowledge, the skills, and the capacities of all the people in a society. In economic terms, it could be described as the accumulation of human capital and its effective investment in the development of an economy. In political terms, human resource development prepares people for adult participation in political processes, particularly as citizens in a democracy. From the social and cultural points of view, the development of human resources helps people to lead fuller and richer lives, less bound by tradition. In short, the processes of human resource development unlock the door to modernization.

Human resources are developed in many ways. The most obvious is by formal education, beginning with primary or first-level education, continuing with various forms of secondary education, and then higher education including the colleges, universities, and higher technical institutes. Second, human resources are also developed "on the job" through systematic or informal training programs in employing institutions; in adult education programs; and through membership in various political, social, religious, and cultural groups. A third process is self-development, as individuals seek to acquire greater knowledge, skills, or capacities through preparation on their own initiative—by taking formal or correspondence courses, by reading, or by learning from others in informal contacts. Motivation for self-development is directly related to the social values of the society and to incentives for training and for entering one occupation as opposed to another, as well as for learning new skills. Two other processes of human resource development are improvements in the health of the working population through better medical and public health programs, and improvements in nutrition, which increase the working capacity of people, on a man-hour basis as well as over a working life.

Obviously, improvements in health and improvements in nutrition are related, and like formal education, may be both a cause of economic growth and a result of it.<sup>1</sup>

## THE ECONOMIC ANALYSIS OF INVESTMENT IN MAN

Before turning to a more detailed review of what economists have said about the contribution of education to economic growth, it is well to stress again that these processes of human resource development are also necessary for the transformation of social and political institutions which people in the modernizing nations are seeking. This objective cannot be divorced from that of economic growth in any realistic analysis leading to policy prescriptions.<sup>2</sup>

Economists have long been aware of the importance of human resource development. Adam Smith, for example, stressed the importance of education at various points in *The Wealth of Nations*, and he specifically included "the acquired and useful abilities of all the inhabitants or members of society" in his concept of "fixed capital":<sup>3</sup>

The acquisition of such talents, by the maintenance of the acquirer during his education, study, or apprenticeship, always costs a real expense, which is a capital fixed and realized, as it were, in his person. Those talents, as they make a part of his fortune, so do they likewise of that of the society to which he belongs.

Alfred Marshall emphasized the importance of education "as a national investment" and in his view "the most valuable of all capital is that invested in human beings."<sup>4</sup>

<sup>1</sup> The latter two processes constitute a large subject, on which very little comparative research has been done. We do not deal with these in the subsequent discussion.

<sup>2</sup> For corroborating views presented in diagrammatic model form, see Paul R. Hanna, "Conventional and Unconventional Education in Newly Developed Countries," reprint from *America's Emerging Role in Overseas Education*, Syracuse University School of Education, 1962; and William J. Platt, "Education—Rich Problems and Poor Markets," *Management Science*, vol. 8, no. 4, fig. 1, p. 410, July, 1962. See also, Eugene Staley, *The Future of Underdeveloped Countries: Political Implications of Economic Development*, published for the Council on Foreign Relations by Frederick A. Praeger, New York, 1961 (rev. ed.), especially chap. II, "Human Resources and the Organizing Factors," p. 228–250.

<sup>3</sup> Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Cannan ed. (reissued by Modern Library), Random House, Inc., 1937, book II, pp. 265–266.

<sup>4</sup> *Principles of Economics*, 8th ed., Macmillan & Co., Ltd., London, 1930, pp. 216, 564. John Vaizey, in *The Economics of Education*, Faber & Faber, Ltd., London, 1962, chap. I, "What Some Economists Said about Education," summarizes the view of English economists and Karl Marx on the economic importance of education.

Modern economists, however, have not paid as much explicit attention to human resources in economic growth as did some of the great classical economists like Smith and Marshall. Perhaps because physical capital was measurable, and a capital-output relationship was given an apparent quantitative respectability, some modern economists virtually ignored the human resource factor in economic development. But within the past five years, a number of economists in the United States have called attention to the importance of human resources, and particularly to investments in education. For example, in his presidential address to the American Economic Association in 1960, Theodore W. Schultz said: <sup>5</sup>

The failure to treat human resources explicitly as a form of capital, as a produced means of production, as the product of investment, has fostered the retention of the classical notion of labor as a capacity to do manual work requiring little knowledge and skill, a capacity with which, according to this notion, laborers are endowed about equally. This notion of labor was wrong in the classical period and it is patently wrong now. Counting individuals who can and want to work and treating such count as a measure of the quantity of an economic factor is no more meaningful than it would be to count the number of all manner of machines to determine their economic importance either as a stock of capital or a flow of productive services.

Measures of capital formation based on fixed capital are deficient, as Simon Kuznets has pointed out, because they omit expenditures for education, nonprofit research, health, recreation, etc., which "contribute to economic growth by increasing the efficiency of a complex productive system."<sup>6</sup> Few economists have been concerned specifically with the relationship of better health and nutrition of the labor force to productivity and economic growth.<sup>7</sup> But the rediscovery of the importance of human resources by Schultz and others has led to more recent efforts to incorpo-

<sup>5</sup> Quoted by permission from American Economic Association, "Investment in Human Capital," by Theodore W. Schultz, *The American Economic Review*, vol. 51, no. 1, p. 3, March, 1961. Schultz notes that Marshall "held that while human beings are incontestably capital from an abstract and mathematical point of view, it would be out of touch with the market place to treat them as capital in practical analyses. Investment in human beings has accordingly seldom been incorporated in the formal core of economics, even though many economists, including Marshall, have seen its relevance at one point or another in what they have written." For a contrary view, see the comment on Schultz's presidential address by Harry G. Shaffer, "Investment in Human Capital: Comment," and Schultz's "Reply," *American Economic Review*, vol. 51, no. 5, pp. 1026-1039, December, 1961.

<sup>6</sup> *Six Lectures on Economic Growth*, The Free Press of Glencoe, New York, 1959, p. 77.

<sup>7</sup> For a survey of the literature, see Selma J. Mushkin, "Health as an Investment," *Journal of Political Economy* (Supplement), vol. 70, no. 5, part 2, pp. 129-157, October, 1962.

rate investments in education into the mainstream of economic analysis.<sup>8</sup> The principal approaches have been the following: (1) determination of the relationship between expenditures on education and growth in income or in physical capital formation over a period of time in one country, (2) the residual approach in determining the contribution of education to gross national product (GNP), (3) calculation of the rate of return from expenditures on education, and (4) making intercountry correlations of school enrollment ratios and GNP.<sup>9</sup>

1. *The relationship between expenditures on education and income or physical capital formation.* Theodore W. Schultz has analyzed this relationship in the United States for the period 1900 to 1956, measured in constant dollars, and has shown that "the resources allocated to education rose about *three and a half times* (a) relative to consumer income in dollars, (b) relative to the gross formation of physical capital in dollars. . . ." <sup>10</sup> In other words, the "income elasticity" of the demand for education was about 3.5 over the period, and alternatively, education considered as an "investment" might be considered as 3.5 times more attractive than investment in physical capital. Schultz adds that "the underlying private and public motives may have been cultural in ways that can hardly be thought of as 'consumption' or they may have been policy determined for purposes that seem remote to 'investments.'"

Schultz has also tried to measure the total stock of "educational capital" at different points in time.<sup>11</sup> By adding together the possible earned income foregone by those enrolled in schools, colleges, and universities (i.e., the "opportunity cost" of education) and the expenditures for formal education of all types (with allowance for depreciation), he calculated a

<sup>8</sup> A collection of papers on some of these efforts was presented at an Exploratory Conference on Capital Investment in Human Beings, held under the sponsorship of the Universities-National Bureau Conference on Economic Research in December, 1961. They were published as *Investment in Human Beings*, supplement to the *Journal of Political Economy*, vol. 70, no. 5, part 2, October, 1962.

<sup>9</sup> In addition to the sources cited below, we are indebted for insights to William G. Bowen, "Assessing the Economic Contribution of Education: An Appraisal of Alternative Approaches," a paper prepared for the meeting of the Study Group in the Economics of Education, OECD, Paris, June, 1962 (mimeographed). Another good review of the literature is Alice M. Rivlin, "Research in the Economics of Higher Education: Progress and Problems," in Selma J. Mushkin (ed.), *Economics of Higher Education*, U.S. Department of Health, Education, and Welfare, 1962, pp. 357-373 especially.

<sup>10</sup> "Education and Economic Growth," in Nelson B. Henry (ed.), the Sixtieth Yearbook of the National Society for the Study of Education, part 2, *Social Forces Influencing American Education*, 1961, University of Chicago Press, Chicago, 1961, p. 60.

<sup>11</sup> Schultz, *op. cit.*, pp. 64-73, and "Capital Formation by Education," *Journal of Political Economy*, vol. 67, no. 6, pp. 571-583, December, 1960.