

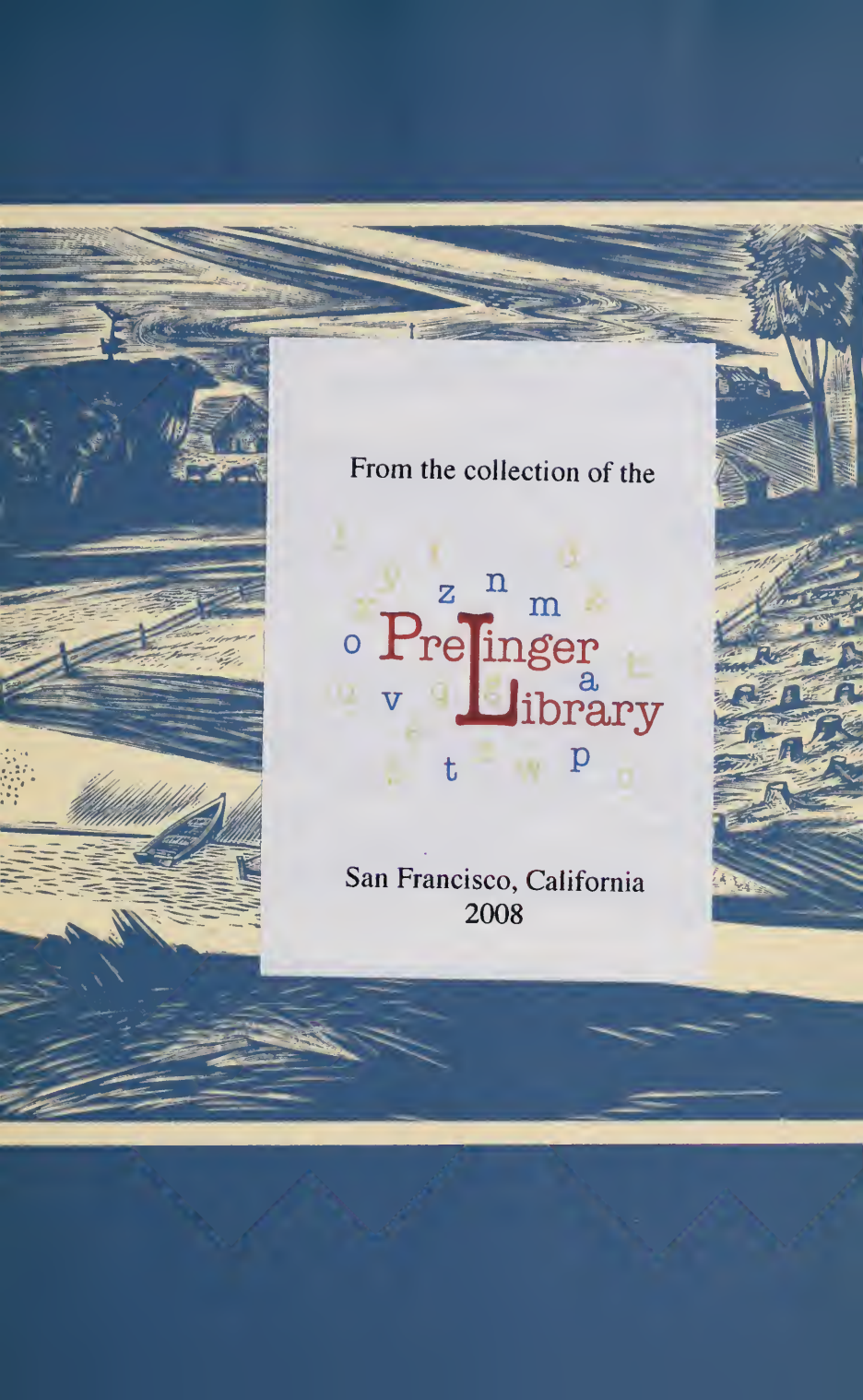
Education and Economic Well-Being in American Democracy



EDUCATIONAL POLICIES COMMISSION

*National Education Association of the United States
and the American Association of School Administrators*



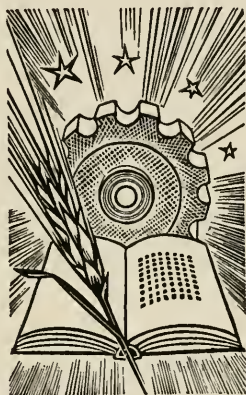


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Education and Economic Well-Being in American Democracy



Thomas A. Hopkins

Educational Policies Commission

*National Education Association of the United States
and the American Association of School Administrators
1201 Sixteenth Street, Northwest, Washington, D. C.*

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Washington, D. C.

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Acknowledgment

IN ITS CONSIDERATION of the highly important relationships between education and economic well-being, the Educational Policies Commission has sought the counsel of economists, educators, and other competent scholars in this field. Chief responsibility for the writing of the report was entrusted by the Commission to one of its members, DR. JOHN K. NORTON. The extensive literature on the subject was reviewed. Thorough discussion by the Commission and the drafting of the manuscript followed. To every phase of this process Dr. Norton brought a wide experience in educational finance, an unusual capacity to follow technical material through to practical conclusions, a penetrating insight into economic and educational issues, and a clear literary style. The Commission records here its deep appreciation of his contribution.

This report was approved for publication by the Commission on November 21, 1939.

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Table of Contents

CHAPTER	PAGE
I. The Economic Challenge to an American Ideal	1
II. Education and Productivity in American Economy	7
III. Kind of General Education for Economic Well-Being	33
IV. Kind of Occupational Education for Economic Well-Being	75
V. Amount of Education for Economic Well-Being	103
VI. Existing and Desirable Amount of Education for Economic Well-Being	133
VII. Extension of Facilities and Selection of Students	155
VIII. Estimating the Cost	173
IX. Financing the Program	187
X. Securing Public Understanding and Action . . .	201
Index	219

Foreword

THE COMMISSION wishes to note here the assistance of a large number of persons who have contributed to the development of this report.

Special acknowledgment is due Harold F. Clark for an extensive memorandum prepared especially for the Commission and which served as a basis for certain chapters of this volume.

Mabel L. Walker prepared a special memorandum on economic literacy and read and criticized preliminary drafts of the report.

A subcommittee of the Educational Policies Commission, consisting of John K. Norton, George S. Counts, and Edmund E. Day, has met on numerous occasions during the consideration of this problem by the Commission. In May 1936 the Commission called into conference at Chicago a group of economists and sociologists including R. M. Haig, Harold G. Moulton, and Howard W. Odum.

A preliminary draft of the report was read by J. M. Clark, who made extensive and helpful criticisms concerning it. Among many others who read and criticized the document we wish to mention especially Edwin A. Lee, Newton Edwards, and Frank Cushman. Alice L. Edwards read and criticized the section on the education of the consumer. Eugene S. Lawler reviewed and criticized the chapter on estimating costs.

We are indebted to the staff of the Libraries of Columbia University, and particularly of the Library of the School of Business, for courteous assistance in making their resources readily available.

The document draws heavily on many deliberative committee reports and publications of sociologists, political scientists, leaders in government and school finance, econo-

mists, and educators. Especially useful have been the findings of the Advisory Committee on Education, the Regents' Inquiry, the American Youth Commission, the National Resources Committee, and many other governmental and private investigations. The appreciation of the Commission is here expressed to these and other authors and publishers for their permission to quote from their publications.

Although none of the individuals or organizations named above should be held responsible for any statements in, or omissions from, this document, the Commission is deeply grateful for their cordial encouragement and helpful cooperation.



I.

THE ECONOMIC CHALLENGE TO AN AMERICAN IDEAL

*Efficient universal education is
the mother of national prosperity.*

—RALPH WALDO EMERSON.

The American ideal of equality of opportunity assumed one of its most concrete forms in a universal system of public schools. Education, conceived first in the limited terms of old world ideas, soon burst these narrow bounds. The common school was developed first to offer elementary education to all the children of all the people. Later secondary education was provided at public expense. Today approximately two-thirds of youths of high-school age are enrolled in secondary schools. Higher education was first the prerogative of a favored few. Now more than a million youths attend the colleges and universities of the nation.

Universal public education grew out of the democratic ideal. It flowered with the fulfillment of that ideal. Education came to be looked upon in the United States as the open door to opportunity. Children and youths might differ in

capacity, wealth, and social position, but in their right to get an education—to capitalize such talents as they possessed—they were to be equal. Such became the ideal of our democratic society.

Circumstances Require Reappraisal of an American Ideal.

Progress requires continual measurement of ideals in terms of achievement. Repeated surveys by groups of thoughtful citizens in recent years have revealed that educational opportunity is far from available to all. Quite apart from industry and ability, the likelihood that a youth will be able to secure adequate and effective education is reduced to a marked degree by such factors as the following: belonging to a poor family, living in regions where wealth and income are too low to afford an adequate local tax base, being a member of a minority group such as the Negro race, and living in a rural area.

Fortuitous factors of the most indefensible character, rather than capacity to learn and willingness to work, now determine the kind and amount of educational opportunity provided millions of American youths. Educational opportunity, instead of being a solvent of class lines based on hereditary wealth and position, threatens to become a cement which sets and perpetuates these distinctions.

Some of the outcomes of this situation are that nearly a million children are not enrolled in any school and many more are attending schools of the poorest quality. Only a minority of the youth of the nation complete their high-school education. At least a third of those who leave school at an early age do so primarily because of financial limitations. Many of those eliminated for this reason possess superior intellectual capacity and other qualities which justify further schooling.

Knowledge is not lacking as to what needs to be done in order that education may fulfill its democratic functions.

This has been the subject of careful study and clear pronouncement by a number of representative groups of citizens in recent years.¹

Why then is action so laggard? The factors responsible are doubtless many and complex. One of the most formidable barriers to educational progress, however, is easy to identify. Persons close to the practical operation of schools and colleges at all levels, public as well as private, in all parts of the country, would generally agree that problems of finance are formidable obstacles to the provision of much needed educational facilities and services.

Education Is Receiving a Decreased Share of Public Funds.

The problem involved in securing adequate funds for education is not a new one. Growing numbers of children and youths who have clamored for admission at school and college doors, and the increasing demands on education of a dynamic civilization, have long made this a difficult problem. Depression conditions have accentuated its difficulty. Among the many factors involved are two which will be identified here.

First, income has been sharply reduced. A national income which approximated 80 billion dollars at the close of the 1920's has vacillated between 40 and 70 billions during the past decade. A second factor has been the reduction in the percentage of governmental expenditures allocated to education. While public expenditures as a whole increased from \$10,844,000,000 in 1930 to \$15,563,000,000 in 1936,

¹ The Educational Policies Commission has outlined *The Unique Function of Education in American Democracy*, described the characteristics which an educated citizen should possess as a result of the proper fulfillment of *The Purposes of Education in American Democracy*, and outlined its conception of what *The Structure and Administration of Education in American Democracy* should be. Other commissions in recent years have made careful analyses of the current educational situation and have also offered proposals for its improvement.

expenditures for public education—elementary, secondary, and higher, regular and emergency, federal, state, and local—declined from \$2,417,000,000 to \$2,237,000,000 in the same period. The percentage of total governmental expenditures allocated to public education declined from 22.3 to 14.4 between 1930 and 1936.²

The factors which resulted in the foregoing trends in public expenditures are extremely complex. There was great pressure for expenditures for relief and social security in various forms. International conditions have resulted in the largest peace-time budgets in our history for war preparations. The fact that the federal government possessed superior tax-raising and borrowing facilities, as compared with state and local governments and boards of education, and used them to finance certain services, was in the picture. Also, local fiscal machinery, through which education is mainly financed in most states, broke down in many communities. Other factors were also involved.

Education Has Decreased Support and Increased Responsibility.

Financial limitations have caused thousands of schools and colleges to restrict their educational services. There has been little opportunity to develop facilities needed by millions of youths whose entrance into economic life has been abnormally delayed, or to respond to other new and urgent demands.

In the meantime, the potential significance of schooling has greatly increased. This is readily illustrated in the economic sector of life. Many business and industrial concerns have sharply raised the amounts of schooling or occupational training required of new employees. The opportunities which young men and women have to "get ahead" in

² Heer, Clarence. *Federal Aid and the Tax Problem*. Washington, D. C.: Government Printing Office, 1939. p. 20-23.

life are dependent as never before upon the schooling they can afford. The amount of general, technical, and professional preparation demanded for occupational success is steadily increasing. Furthermore, a higher degree of economic literacy is needed in order that citizens may have the ability to criticize and intelligently appraise current economic goals and policies. Failure to provide the educational facilities demanded by the nature of our society will amount to a rejection of the ideal of equality of opportunity.

*Education and Economic Well-Being
Are Interdependent.*

Under current conditions, judgments are constantly being made affecting schools and colleges in the United States, in which immediate financial expediency is the determinant. Decisions as to the kind and the amount of education which will be provided are made with the most meager consideration of long-range effects on the economic as well as other areas of life.

The problem of financing the kind and amount of education which will maintain a high technology in a democratic, industrial society demands fundamental examination of the interrelations of education and economics. It calls for thoughtful appraisal of the contributions which education makes to productivity and general economic well-being, and judicial consideration of the economic limitations on the amount which may be wisely spent for education.

Hence this volume deals with questions such as these: What factors contribute to high productivity in an economy such as ours, and what contribution does education make to such productivity? Does the improvement and strengthening of our national economy involve an improved program of public education? What kind of educational opportunity for youth is socially desirable? What kind and amount of education will result in maximum eco-

conomic well-being? To what extent are children and youths of superior ability denied educational opportunity because of lack of family finances? What effect has such denial on productivity and national income? To what extent will an educational program, right in kind and amount, tend to amortize its cost? Has the nation reached a period when it appears that basic economic limitations require restriction of the further development of free education? Or does it appear wise, from a purely economic point of view, further to extend this expression of the American ideal of equality of opportunity?

The program proposed here should be appraised from the point of view of long-term, rather than immediate, considerations. It should be looked upon as a series of general policies to guide future educational development, with its economic functions in mind, rather than a blueprint of specifics. The proposals made will need adaptations to state and local situations. They should be modified and perfected in the light of future experience.

The Commission fully recognizes the limitations and difficulties of a study which focuses attention on the relation of education to one sector of life—the economic. The influence of education is too pervasive to permit studying its economic effects in complete isolation. The results of education are by no means limited to the economic sphere. Education's contributions to the spiritual, ethical, and intellectual realms have always been, and will always be, of greater significance than those in the sphere of material things. The desirability of a given kind or amount of education can never be decided on purely economic grounds. The economic phase is inextricably interwoven with other phases of human culture. Accordingly, it is more accurate to say that this volume is mainly concerned with, rather than confined to, the interrelationships of education and economic well-being in American democracy.



II.

EDUCATION AND PRODUCTIVITY IN AMERICAN ECONOMY

*The basic process by which the productive capacity
of society is maintained or increased is by education.*

—CHESTER I. BARNARD.

It is the purpose of this chapter to identify elements and characteristics of an economy which contribute to productivity, and to appraise the extent to which education contributes to them.

Economists Identify Certain Basic Factors of Production.

Economists differ on details in analyzing the basic elements in the productive process. Their discussions, however, generally recognize four basic factors. Labor, whether of brain or of brawn, is identified as an essential element. Natural resources, involving the raw materials of land, water, and climate upon which production rests, consti-

tute another basic factor. A third element in production is capital, including such factors as tools and machinery, factories, warehouses, and inventories. The efficient use of all factors of production depends upon organization and management. These have become so important in industrial economy that some class them as a fourth basic element in production.

The manner in which labor, natural resources, capital, and organization and management operate in relation to production differs in many respects in a highly specialized technological economy from that in a less advanced society. In appraising the relation of education to the foregoing factors in the productive process, we shall have in mind their roles in a highly developed industrial society such as the United States.

*Intelligence and Efficiency of Labor
Vitality Affect Economic Production.*

It is a lesson of history, as well as of contemporary times, that the human resources of a nation constitute its primary wealth. Nations have grown rich and powerful in the absence of outstanding physical resources by developing their human assets. Others have remained poor and backward in the presence of unusual natural resources. It is human intelligence which gives these resources value. To a savage, coal is black rock and a waterfall merely a physical danger to be avoided. To an intelligent man they are the source of energy for power-driven industries of fabulous productivity.

It is such considerations which have led economists to recognize the importance of the human factor in the productive process. Seligman states the case as follows:

"The older economists were fond of emphasizing the dependence of the demand for labor upon capital. While this analysis was in many respects valuable, they overlooked

the independent power of labor to contribute to its own uplifting through an increase of efficiency. It is precisely here that the economic effects of education and leisure as well as of social and political progress mean so much to the community. In the commercial warfare that is being waged between nations today, education is recognized as a potent weapon. . . . The finer the tool, the greater will be the product; when the tool consists of human energy, we have not only a greater product, but a greater capacity in the human being to utilize the product.”¹

A carefully planned and efficiently administered system of education significantly increases the intelligence and efficiency of labor. Several ways in which education exercises this important economic effect are dealt with in subsequent paragraphs.

Educational Opportunity Encourages the Worker To Rise through Personal Effort.

One of the key ideals of American life has been the belief that the individual through his own efforts might rise to a position of competence and respect. A closer approach to equality of opportunity, as opposed to opportunity fixed by social and economic position of family, is a major distinction between the new and the old world. It supplied powerful incentive during the period when political and economic individualism were emphasized in the United States. It was “a driving influence in the extraordinary development of the material resources of the nation.”² Through education every individual might advance as far as his talents could carry him. Economists

¹ Seligman, Edwin R. A. *Principles of Economics*. Sixth Edition. New York: Longmans, Green and Co., 1914. p. 292.

² National Education Association and American Association of School Administrators, Educational Policies Commission. *The Unique Function of Education in American Democracy*. Washington, D. C.: the Commission, 1937. p. 38.

recognize the economic effect of maintaining an open door to educational opportunity.

"The greatest stimulus that can be given to the human spirit is to serve notice upon it that its achievements are to be limited solely by its own native power, . . . that neither birth nor family prestige will count for much, and that humble birth and lack of prestige are no handicap to the person of ability and industry. This has made the typical American a model of energy. Our public school system has provided him a free chance to train whatever native ability he possessed."³

With the passing of each decade, graduation from high school and even more extended schooling are prerequisite to admission to a growing percentage of occupations. Energy and graduation from the "school of hard knocks" no longer promise success in most callings. Opportunity more and more lies along the route of extensive general education and specific trade or professional training. The doors of educational opportunity must be wider than ever before, if all Americans are to feel that no insuperable obstacles prevent the individual from realizing the best that is in him. Such a feeling must prevail if the dynamic economic effects of education are to continue.

General and Specialized Training Increase the Efficiency of Labor.

The industrial revolution, resulting in history's most dramatic increase in economic productivity, may be epitomized in the fact that a growing percentage of trained workers have used more and more effective methods of work. A high output per worker is generally associated with a high level of vocational intelligence and skill—not the reverse. Census data show that the growth of productivity in the United States has been paralleled by a

³ Carver, Thomas Nixon, and Lester, Hugh W. *This Economic World and How It May Be Improved*. Chicago, Ill.: A. W. Shaw Co., 1928. p. 365.

reduction in the proportion of unskilled laborers.⁴ Instead of a great mass of unskilled labor, modern economy more and more demands semi-skilled and skilled workers. In the fields of manufacturing between 1910 and 1930, the numbers of skilled workers increased most rapidly, semi-skilled, the next, and unskilled, least rapidly. In manufacturing in the United States today about one-fourth of the workers are unskilled; about one-half, semi-skilled; and about one-fourth, skilled.⁵

During the depression unemployment has been greatest among unskilled laborers. For example, the *Report of Committee on Employment* of the Chamber of Commerce of the United States in 1936 stated:

"In each analysis which has proved possible, and in the reports received from organization members of the Chamber, the relatively small national figure for unemployment among skilled workers has become evident . . . the preponderance of unskilled workers among employable persons on federal work-relief is equally apparent. . . . In an eastern city, of applicants from relief rolls for employment less than 6% were eligible as skilled workers, 5% as clerks, and over 65% as unskilled laborers, apprentices, or helpers. Responsible studies made in other cities bear out these percentages."

A government study of employment made during the depression revealed that the highest number of unemployed persons per thousand gainful male workers in each occupation occurred in the following classifications: Unskilled laborers, semi-skilled workers, farm laborers, and servants.⁶ An acute shortage of skilled labor has been reported by some industries. Apparently, even during the abnormal

⁴ Spencer, Lyle M. "Some Effects of Technological Change on Jobs." *Occupations* 17:611-612; April 1939.

⁵ Jerome, Harry. *Mechanization in Industry*. New York: National Bureau of Economic Research, 1934. p. 296.

⁶ *Census of Partial Employment, Unemployment, and Occupations*, 1937. Vol. I. Washington, D. C.: Government Printing Office. p. 5-6.

period of the depression, there was a greater demand for trained than for untrained workers. In appraising this fact, it should be realized that native capacity as well as many factors other than general and vocational education affect an individual's chances of getting and keeping a job.

The most immediate and apparent economic outcome of education is where it provides specific training for a trade or other definite vocation. Skilled workers generally produce more than semi-skilled and still more than unskilled. Specific vocational education may be provided by a variety of agencies—trade schools, public and private, as well as industry itself. The important thing, however, is that the provision of such training has positive economic effects. Bye and Hewett sum up the situation as follows:

“Without education one is likely to be limited to unskilled occupations. With education he is able to find more remunerative employment. The general effect of more widespread schooling is to increase the ranks of skilled workmen and to decrease the number of people capable only of cruder manual work.”⁷

It is important, however, that education to increase efficiency of labor should not be conceived in narrow terms. The effective operation of enormous aggregations of labor and capital, characteristic of contemporary economy, demands high types of vocational and economic intelligence. Improved organization and industrial techniques can be the outgrowth of suggestion and initiative on the part of the rank and file worker as well as the product of research and managerial ingenuity. The general pattern of organization in a business enterprise is likely to be different, as well as more efficient, when the manager is able to assume a degree of judgment and initiative on the part of the worker, as opposed to the ability merely to follow simple

⁷ Bye, Raymond T., and Hewett, William W. *Applied Economics*. New York: Alfred A. Knopf, 1928. p. 123.

directions in a routine manner. Even pressure for a higher standard of living on the part of ambitious workers, resulting in more efficient production processes, may exercise an influence toward industrial advancement. Marshall clearly recognized the need for something more than narrow vocational training even for the lower grades of industrial workers.

"It is true that there are many kinds of work which can be done as efficiently by an uneducated as by an educated workman; and that the higher branches of education are of little direct use except to employers and foremen and to a comparatively small number of artisans. But a good education confers great indirect benefits even on the ordinary workman. It stimulates his mental activity; it fosters in him a habit of wise inquisitiveness; it makes him more intelligent, more ready, more trustworthy in his ordinary work; it raises the tone of his life in working hours and out of working hours; it is thus an important means toward the production of material wealth. . . ."⁸

More recently, an industrial leader, from a background of practical experience in directing a large business organization, stated:

". . . the *effectiveness* of individual capacity to produce, or to manage production, is determined by the degree of social cooperation, and that this cooperation depends primarily upon education high productive efficiency is impossible without widespread education. This is not simply a matter of securing leaders in science, invention, industrial organization, statecraft, etc., by an educational screening of the masses. No greater error could be made, it seems to me, than to adopt the notion too commonly held that either political or economic effectiveness is chiefly a matter of leadership. When generals can find no colonels, they must become mere captains. Captains are limited by

⁸ Marshall, Alfred. *Principles of Economics*. Eighth edition. London: Macmillan Co., 1920. p. 211.

the character, spirit, and ability of the men they command. The intensive training given to recruits is significant.”⁹

Education in the past has contributed in providing specific vocational skills as well as general economic understanding essential to the existence and highest productivity of an economy, characterized by far-flung organization, specialization, and power-driven machines. In the future it can and should make greater contributions to productivity in these areas. Workers with trade skills and economic intelligence are consistent both with democratic culture and maximum productivity.

*Education Increases Productivity
by Promoting Occupational Mobility.*

It is an accepted tenet of economics that the ability of labor to secure the training needed to transfer from crowded and low-paid occupations to those less crowded and better-paid tends to increase the national income. When workers of energy and capacity must continue in low-paid common labor because of inability to secure training requisite to entering higher-paid callings, the national income tends to be decreased.

Occupational mobility of labor is of increasing importance in a dynamic economy in which new discoveries are continually creating new vocations, many of which involve technical training. Education in the past has assisted in thinning out the overcrowded ranks of unskilled labor by increasing the proportion of workers in skilled and professional occupations. Its contribution in this area in the future should and can be made far more effective. This vital economic responsibility is recognized by many leading economists.

⁹ Barnard, Chester I. (President, New Jersey Bell Telephone Company, Newark, N. J.) “Education and Social Welfare.” 1934. p. 13 and 15.

"To remove the obstacles which pen the mass of people within the lowest income classes we must rely upon education and vocational training. When a large section of the population is underpaid it is not because the economic function they perform is of little value in itself. On the contrary the labor of society's machine-tenders, clerical workers, and even unskilled laborers is indispensable in the sense that the productive system would collapse if these functions were not rendered. The fault lies, not in the vocation, but in the number of people who occupy it. Any policy whose effect is to reduce the numbers in the low-wage groups by transferring some of them to less crowded occupations will raise the lower incomes and reduce the higher, at the same time increasing the average."¹⁰

Health Education Has Significant Economic Effects.

The conservation of human resources is a matter of primary and increasing economic importance in an economy such as that of the United States. The cost and time involved in preparing youth for economic production is much greater than it was in earlier periods.

The advance of medical science, the administration of public health, and health education disseminated through schools and other agencies have won major victories in the conservation of health. The average span of human life has been enormously increased. These gains are attributable chiefly to reduction in infant mortality. Education in child care is one of many factors helping to bring this about.

The economic value of lengthening of human life has been estimated in billions of dollars.¹¹ Each year which can be added to the productive period of life increases the social dividends paid on investments in education and training.

¹⁰ Fairchild, Fred Rogers; Furniss, Edgar Stevenson; and Buck, Norman Sydney. *Economics*. New York: Macmillan Co., 1937. p. 292-293.

¹¹ Dublin, Louis I., and Lotka, Alfred J. *The Money Value of a Man*. New York: Ronald Press Company, 1930. p. 264.

Losses due to premature death and unnecessary illness, however, are still enormous. Success in conserving human life in the ages beyond fifty has been much less spectacular than in the beginning years of life. Education is one of the means of combating deleterious effects on both mind and body of the stress and strain of modern industrial life.

Health work in good school systems aims to build attitudes and habits of living which promote positive health. One study of the influence of health education over a twelve-year period on children, ranging in age from seven to twelve years, revealed improvements "in specific types of physical conditions as well as in general health and changes in health practices." Yearly tests of children who participated in this health-education program also revealed "very striking indications of a stimulating effect of health-training on a child's rate of improvement in school subjects."¹²

The aim of physical education is increasingly to provide activities for all children, with individual needs and lifelong recreational interests in mind, rather than athletic shows in which only the most physically fit participate.

It is not possible to measure exactly the value of the contribution of schools and colleges to the physical well-being of the nation. The field of safety education, however, provides one dramatic illustration of effective results. Cities with sound safety programs have been able to decrease fatalities among children. In New York City, for example, in the decade ending in 1935, fatal automobile accidents involving adults increased 80 percent, while those involving children decreased 30 percent.¹³

¹² Hardy, Martha Crumpton, and Hoefer, Carolyn H. *Healthy Growth*. Chicago: University of Chicago Press, 1936. p. 74, 184.

¹³ Stack, Herbert J. "The Place of Safety Education in the School Health and Physical Education Program." *Journal of Health and Physical Education* 6:3-6, 71-72; March 1935.

By 1922, safety education had been introduced in many schools. By 1937, fifteen years later, the accidental death toll among school children was 25 percent less per 100,000 population. The decrease between 1936 and 1937 alone was 6 percent.¹⁴ It seems probable that the teaching of safety in the schools is at least partly responsible for this decrease in accidents.

The results of thorough safety education in schools not only tends to conserve the lives of children and youths but should carry over into later life. Avoidance of accidents is primarily an outcome of inculcation of knowledge and attitudes affecting safety and of practice in carrying out safety measures until these become habits.

Great victories in the conservation of human life and health have still to be won. Premature death, avoidable illness, remediable physical defects, mental disease, unnecessary accidents, and low vitality take tremendous economic tolls. One of the reasons why scientific knowledge as to how to eliminate these scourges is not more promptly applied is stated thus by the American Youth Commission:

"The facilities now available to young people are wholly inadequate to ensure that the resources of modern science will be applied to the highest development of their health and physical fitness. These facilities are inadequate for health instruction and physical examination as well as for remedial care."¹⁵

Education has, and should be expected to play, a potent part in putting growing knowledge in these areas into action. Better planned, better administered, and universally provided programs of health and physical education would have enormous economic effects.

¹⁴ National Education Association, Research Division. "Safety Education Thru Schools." *Research Bulletin* 16:241; November 1938.

¹⁵ American Council on Education, American Youth Commission. *A Program of Action for American Youth*. Recommendations of the American Youth Commission, 1939. p. 11.

*Educated Man-Power Is a
Perishable Resource.*

Continuous education for replacement of economic knowledge and skill is of supreme importance in a technological society. The length of the period of training and the brief span of a man's working years testify to this fact. Education has an enormous job to perform in merely maintaining the present accumulated capital of economic knowledge and skill. Every death of a professionally or technically trained worker reduces this capital unless it is currently replaced. King describes the perishable nature of this economic asset as follows:

"Some of the most expensive and important forms of savings are not tangible but consist of such things as accumulated scientific knowledge and the training of the human mind. Savings of the last-mentioned variety are extremely perishable, since they are constantly being lost through the death of the persons possessing the education."¹⁶

Taussig points out the necessity and possibility of conserving this asset. He writes:

"Man's great moral, intellectual, educational equipment must be conserved, like his material capital, by unremitting effort, and like that can be increased by effort."¹⁷

*The Conservation of Natural Resources
Is Important to Production.*

A second basic factor of production is the resources of land, water, and climate, which provide the raw materials of productive effort. The lack of foresight in America's wasteful depletion of natural resources is an outcome of

¹⁶ King, Willford I. "The Net Volume of Saving in the United States." *American Statistical Association Journal*, 1922. p. 307.

¹⁷ Taussig, F. W. *Principles of Economics*. Vol. I, Fourth Edition. New York: Macmillan Co., 1939. p. 96.

their plenitude. Other peoples have gained from experience the lesson which the United States is just beginning to learn. European farmers long ago learned to plow with the contours and to avoid losing the soil on steep hillsides. There are European valleys today in which fertility is greater than it was two thousand years ago. Sections of China and other parts of Asia offer soil-denuded deserts as a warning of the tragic economic results of improper use of resources.

Our country already offers dramatic examples of tremendous economic waste resulting from improper use of Nature's heritage. The chief of the United States Soil Conservation Service recently testified that erosion has already ruined 50,000,000 acres of agricultural land which was once productive and that another 50,000,000 acres has been almost ruined. Erosion is also seriously damaging 200,000,000 acres more.¹⁸

The profligacy with which we are using our vast mineral resources has been summed up as follows: "The United States is, in addition to being the greatest producer, also the greatest consumer of mineral products, and probably also the greatest waster."¹⁹ A government planning commission recently declared:

"The waste of gas, oil, and coal now going on . . . deserves the measured use of the word 'intolerable.' . . . Present overdevelopment of some minerals has tended to obscure the central and dominant fact that, in relation to what we hope will be the life of the Nation, our mineral supplies are too limited to excuse the wasteful exploitation that now often prevails."²⁰

¹⁸ Hearings before a Special Committee to Investigate Unemployment and Relief, United States Senate, Vol. II, p. 1069; March 9, 1938.

¹⁹ Gustafson, A. F., and others. *Conservation in the United States*. Cornell Heights, Ithaca, N. Y.: Comstock Publishing Co., 1939. p. 356.

²⁰ National Resources Board. *Report on National Planning and Public Works in Relation to Natural Resources*. Part IV. Washington, D. C.: Government Printing Office, 1934. p. 392, 393.

Great stretches of virgin forest constituted a fabulous resource of the United States. Travelers in our early history marveled at the glory of this heritage. Only recently has effort been made to check the exploitative character of the lumber industry. As late as 1920 it was estimated that the annual cut of forests, including waste and destruction by insects and fires, was four times the annual growth.²¹ While recent estimates indicate a lower ratio of consumption to growth, it is still far too high, when effects on soil, rainfall, and flood conditions are considered, as well as the need for a constant supply of high quality timber in the future. We are drawing heavily on a reserve built up for centuries previous to the occupation of the continent by the white man.

Education Increases the Economic Possibilities of Conservation.

Schools and colleges have already made substantial contributions in this area. Schools and extension services are teaching farmers the importance of contour plowing, crop rotation, soil fertilization, and protection of forests. Colleges and universities are conducting research and imparting technical knowledge to agricultural and chemical engineers, business executives, and other experts. The responsibility of education for developing a conservation viewpoint is stated thus by a group of scientists:

"A great need of our nation today is the development by the individual citizen of a consciousness of the definite necessity for the conservation of our natural resources. Much of real value has been accomplished during the past three decades, but a widespread campaign of conservation education is imperative. Such education has been in prog-

²¹ President's Research Committee on Social Trends. *Recent Social Trends in the United States*. Vol. I. New York: McGraw-Hill Book Co., 1933. p. 115.

ress in a limited way in the colleges for some years. A beginning has been made in placing information concerning the need for conservation in the hands of our younger students. This age-group must come to the realization that future supplies of food, clothing and other necessities are being jeopardized by the uneconomical and sometimes careless or wasteful methods of the present day. They become voters soon after leaving high school and will then be in a position to insist upon wise conservation and utilization of natural resources.”²²

Further contributions of education in conserving our heritage of physical resources should be made in directions already begun. There should be increased appreciation of the fortunate position of the United States. We have but 6.2 percent of the world's population, but we produce and consume some 50 percent of the world's mechanical energy. The United States ranks first among world powers as to national self-sufficiency in iron ore, coal, petroleum, copper, lead, sulphur, aluminum, zinc, phosphates, and other strategic resources.²³

Conservation education should emphasize wise and economic use of natural resources and various types of conservation activity, and develop vigorous public disapproval of flagrant waste.

Science and Education Significantly Contribute to Development of Capital.

Capital is a third basic element in production. Here we are concerned with tools, machinery, plants, and technical processes employed in transforming materials into consumer goods. Science and technology are involved since they play a major role in discovering the tools and technical

²² Gustafson, A. F., and others. *Op cit.*, p. 14.

²³ Emeny, Brooks. *The Strategy of Raw Materials*. New York: Macmillan Co., 1934. 202 p.

processes which give capital its peculiar modern characteristics.

Colleges and universities have conducted much of the significant research resulting in basic modifications in techniques of production and designs of machines and equipment. Research in the field of agriculture has perhaps been the most continuous and effective. Investigations concerning agricultural and biological chemistry, soils and soil fertility, field crops, horticulture, animal husbandry, and many other areas have been a major factor in remaking agriculture in the United States during the past two or three generations.²⁴

"Detailed study of the accomplishment of the agricultural experiment stations in strengthening agriculture and increasing the money value of its products shows an enormous return on the money invested."²⁵ Agricultural research is undoubtedly one of the factors responsible for an almost unbroken increase in production per man in this basic industry.

The research of scientific workers in universities has resulted in discoveries on which many new industries have been founded. Hall's discovery at an American university of an economic method for the production of metallic aluminum was crucial in the development of the aluminum industry. This is but one of many illustrations of the important effect of university research in founding new industries.

"Eighteen of the new industries which have grown directly out of scientific research within the past 50 years provide one-fourth of all the employment in the United

²⁴ Fletcher, S. W. "The Major Research Achievements Made Possible Through Grants Under the Hatch Act." *Proceedings, Fifty-First Annual Convention, Association of Land-Grant Colleges and Universities*. Washington, D. C., 1937. p. 136-144.

²⁵ National Resources Committee. *Research—A National Resource*. . . Washington, D. C.: Government Printing Office, 1938. p. 169.

States. The majority of the products now manufactured by electrical companies were unknown 15 years ago. It is estimated that 95 per cent of our chemical industry is based on fundamental discoveries made in university laboratories."²⁶

Universities and colleges are continually contributing to the greater efficiency of existing industries. There is scarcely an industry of any importance today which has not been aided in its development at crucial points by the researches of university faculties.²⁷ Nearly two hundred college laboratories are used not only for the purpose of instruction, but also to a considerable extent for industrial research work and commercial testing.²⁸ The proved economic value of university research is one of the factors which has influenced industry to establish commercial research laboratories, involving expenditures of \$100,-000,000 annually.²⁹

Universities offer an environment where disinterestedness and continuity of scientific inquiry provide much of the basic information which must be drawn upon in improving existing technological processes and in establishing new ones. The cooperative relationships, built up in recent years between university laboratories and industry, have greatly increased the economic value of university research. At the same time these institutions carry on most of the pure research through which many discoveries of fundamental economic significance are made.

²⁶ Compton, Karl T. "Technical Progress and Social Development." *Electrical Engineering* 58:12; January 1939.

²⁷ Jackson, Dugald C. "The University Laboratory as a Partner of Industry." Chapter IX, *Profitable Practice in Industrial Research*, Malcolm Ross, Editor. New York: Harper and Brothers, 1932. p. 176.

²⁸ Hamor, W. A. "Industrial Research." *Encyclopedia Britannica*. Vol. XIX, Fourteenth Ed. New York: Encyclopedia Britannica, Inc., 1929. p. 206.

²⁹ National Resources Committee. *Research—A National Resource*. *Op. cit.*, p. 3.

Management Is a Crucial Factor in Modern Economy.

The size and complexity of business concerns, the number of employees involved, the range of raw materials consumed, and the amount and types of capital equipment employed, give a social significance to executive decisions and demand a grasp of technical knowledge and principles of organization, which transcend those required of entrepreneurs of earlier economies. The extensive role played by large business organizations is indicated by a recent survey which shows that "over a third of the manpower engaged in production in 1937 was attached to administrative units of 300 persons or more, while approximately one-eighth was employed in administrative units of 10,000 persons or more."³⁰ In 1937 in five great branches of industry—mining, the public utilities, manufacturing, transportation, and communication—the percent of all business done by corporations ranged from 90 to 100.³¹

Education Contributes to Effectiveness of Management.

Education has provided an environment in which children and youths of all classes have rubbed elbows and have developed a community of understanding essential to a reasonable degree of social cooperation in the productive enterprise. The influence of the common school is one of the factors which has retarded the development of class lines.

Education has also provided a means whereby genius and energy might rise to positions of leadership. Many econo-

³⁰ National Resources Committee. *The Structure of the American Economy*. Part I. Washington, D. C.: Government Printing Office, 1939. p. 99.

³¹ United States, Temporary National Economic Committee. *Investigation of Concentration of Economic Power*. Hearings, Seventy-Fifth Congress, December 2, 1938. p. 96.

mists have recognized the economic importance of this educational function. Marshall many years ago stated it as follows:

" . . . the wisdom of expending public and private funds on education is not to be measured by its direct fruits alone. It will be profitable as a mere investment, to give the masses of the people much greater opportunities than they can generally avail themselves of. For by this means many, who would have died unknown, are enabled to get the start needed for bringing out their latent abilities. And the economic value of one great industrial genius is sufficient to cover the expenses of the education of a whole town; for one new idea, such as Bessemer's chief invention, adds as much to England's productive power as the labour of a hundred thousand men."³²

Schools have long provided literacy and other elementary education which even the "self-made" man has possessed. The tendency recently has been to emphasize the importance of formal training as a qualification for leadership in business enterprises. Gemmill, in discussing the relation of education to modern business, writes:

"It is vital . . . that management be well-informed and mentally alert, with the ability to reason from cause to effect, and the power to visualize in advance the outcome of a proposed course of action. . . . Training for business life must not be expected to work miracles, but it has done much, and can do still more, to add to the effectiveness of human effort (whether manual or managerial) expended in economic activities."³³

Colleges, technical schools, and universities train scientists, engineers, and technologists who provide expert knowledge for the business executive and who in some cases themselves assume managerial ability. Graduate

³² Marshall, Alfred. *Op. cit.*, p. 216.

³³ Gemmill, Paul Fleming. *Fundamentals of Economics*. New York: Harper and Brothers, 1939. p. 171.

schools of business are training growing numbers of young men, who first enter minor executive positions from which are recruited those who rise to positions of major managerial importance.

*Education Significantly Affects
All Factors of Production.*

Economists recognize the effects of sound education on all factors of production. Education's influence is so pervasive and important that some classify it as a basic factor of production in itself. Almost a century ago, near the beginning of the industrial revolution, Senior assessed the economic value of education as follows:

"No country is so poor as to be unable to bear the expense of good elementary schools. Strictly speaking it is not an expense. The money so employed is much more than repaid by the superiority and diligence, in skill, in economy, in health—in short in all the qualities which fit men to produce and preserve wealth, of an educated over an uneducated community."³⁴

Later economists, cited elsewhere in this chapter, expand the considerations which suggest the relationship of high productivity and adequate provision for education. Is there direct evidence as well as economic theory to support the thesis that education improves national productivity? Are there facts which support the claims of economists on this point?

*Statistical Evidence Indicates Relation
of Education and Productivity.*

Per capita production and per capita income have increased several fold during the past century in nations like

³⁴ Senior, Nassau W. *Industrial Efficiency and Social Economy*. Vol. II. Original mss. arranged and edited by S. Leon Levy. New York: Henry Holt and Co., 1928. p. 328.

Great Britain and the United States.³⁵ During the last seventy years, population in the United States has increased threefold while the physical volume of goods produced and consumed has increased more than ninefold.³⁶

The primary factor in this phenomenal expansion in productivity has been the application of science to the processes of production. Education, however, makes significant contributions to all factors of production as has been indicated in this chapter. Scientific knowledge is helpless in achieving high productivity where ignorance abounds.

The economic development of the nations of the world indicates that a high level of economic productivity and substantial provision of educational facilities go together. The coincidence of ignorance and poverty is also a universal phenomenon. The foregoing evidence, however, cannot be accepted as conclusive. The complexity of the factors involved is too great to permit easy conclusions. The fact that logical analysis and statistical evidence reveal the correlation of two factors does not in itself conclusively prove causal relationship. Both may be the outcome of one or more comprehensive causes. It is important, however, that as techniques of research have been refined, resulting evidence increasingly supports the hypothesis of economists as to the relationship of education and productivity.

A number of studies have attempted to assess the relationship of productivity and provision for education among the forty-eight states of the Union. One of the most comprehensive and careful of these was made several years ago by Bowyer.³⁷ It attempted to compare the per-

³⁵ Thornton, Jesse E. (Compiler). *Science and Social Change*. Washington, D. C.: Brookings Institution, 1939. p. 290.

³⁶ Stewart, Paul W.; Dewhurst, J. Frederic; and Field, Louise. *Does Distribution Cost Too Much?* New York: Twentieth Century Fund, 1939. p. 337.

³⁷ Bowyer, Vernon. "Relation of Public-School Support to Subsequent Per-Capita Wealth of States." *Elementary School Journal* 33:333-45, 417-26; January and February, 1933.

centage of its wealth which a state spends for schools with the rate of increase of its wealth during the subsequent twenty-five years. This study found that "in those states in which the percentage of wealth expended for public schools in 1890, 1900, and 1912 was the greatest, the increase in the average per capita wealth during the following periods was larger than the corresponding increase in states which had provided less adequately for their schools." The significance of this finding is increased by the fact that the study, by using the partial correlation technique, attempted to eliminate or to hold constant such factors as population changes and migration, wealth of a state at the beginning of the period, differences in temperature and climate, private school attendance, proportions of population colored and foreign-born, and value of mineral products. The conclusion was that:

"Elimination of the influence of these various factors fails to disclose any which seem to have an appreciable effect in helping to produce the positive relation between school support and subsequent changes in per capita wealth. In fact, elimination of the influence of the other factors serves in most cases to increase the positive correlation. . . .

"The fact that this study has revealed no outside influence which furnishes an explanation of the positive correlation found between school support and subsequent per capita wealth does not, of course, preclude the possibility that such a factor may be found in the course of further investigation. Until and unless some other factor is discovered which accounts for the positive relation shown to exist, however, it is reasonable to conclude that financial support of public schools has had a causal bearing on subsequent increase or decrease in per capita wealth of the states."³⁸

The negative effect on earning power of inadequate provision for education has been appraised by Odum in his

³⁸ *Ibid.*, p. 425-426.

sociological studies. He shows that "the Southeast excels in the two primary resources: namely, natural wealth and human wealth, while it lags in the secondary resources of technology, artificial wealth, and institutional services."³⁹ One of the outcomes of these lags is the wasted "possibilities of youth undeveloped and untrained, born, living, and moving through life without ever gaining a knowledge of their power and possibilities. . . ." The outstanding fact seems to be that of "undeveloped possibilities and of human waste." One of the economic outcomes of this situation is stated by Odum as follows:

"Income and wages rank uniformly from 30 to 50 per cent below the national level. This differential corresponds to some extent to a similar differential in skill and training of workers and of machinery in the region adapted to its resources and to the better training of its workers. The lag in human use is illustrated by the case of furniture manufacture, where the Southeast furnished 17 per cent of the nation's workers, 11 per cent of the pay roll, 12 per cent of the value added to products. As compared with the nation's \$3,600, the Southeast's value added per wage earner was less than \$2,000."⁴⁰

Odum warns against placing sole reliance in the provision of formal educational facilities in correcting such deficiencies. He recognizes the need for a constructive attack along many fronts, one of which should be larger provision for education and other institutions capable of capitalizing the latent human and natural resources of the South. Alongside these improvements for the development and training of the people for better work and better pay should go coordinate efforts for the reconstruction of agriculture, industry, and markets.⁴¹

³⁹ Odum, Howard W. *Southern Regions of the United States*. Chapel Hill: University of North Carolina Press, 1936. p. 22.

⁴⁰ *Ibid.*, p. 49.

⁴¹ *Ibid.*, p. 199.

*The Cumulative Influence of
Education Is Most Important.*

It appears then that the logical analyses of economists, involving more than a century of study, the experience of the nations of the world, and the findings of technical statistical investigations unite in supporting the hypothesis that high productivity and adequate education go together and that the latter does have important effects on the former.

It is important, however, that easy conclusions and naive assumptions should not be encouraged by this undoubtedly important fact. The Educational Policies Commission does not believe that mere increases in amount of education, irrespective of its quality, character, and incidence, will be likely to have important economic effects. The kind and amount of education which is of greatest economic value is dealt with in other chapters of this report.

The Commission warns against either exaggerating or minimizing the effects of education on production. Education is only one of several factors responsible for the remarkable increase in economic productivity, which some nations have achieved during the last century. It would be superficial to disregard this fact in assessing education's contribution. On the other hand, it is not necessary to make extravagant claims as to the economic value of education. The annual cost of schools and colleges, both public and private, in the United States is only about three billion dollars even in the most prosperous years. This, after all, is a minor fraction of the eighty billion income which the nation enjoys in such years. The assumption that even a minor fraction of such an unprecedented level of productivity can be credited to the effects of education would more than amortize its cost.

Thorndike, in some of his investigations, has been critical of the tendency to over-assess the efficacy of schooling. He estimates, however, that "about 16 percent of the present difference in states" on "thirty-six items of a good life" is due to "the schooling of the past" without taking account of education's "affiliation with the personal qualities of the population of the past."⁴²

The most significant effects of education in the productive process are neither simple nor immediate. Certain long-term and cumulative effects are of greatest importance. When education aids in creating a culture, marked by security and a high level of social cooperation, it has helped in building the very foundation of technological economy. A vast, but sensitive, production technique can be created and operated only in an environment, characterized by an unusual degree of security and social cooperation.

The relation of education and productivity is most clearly understood when one looks upon them as complementary. The existence of a high level of productivity makes possible the financing of an extensive system of schools and colleges. Adequate provision for education is essential to a high level of productivity. Each makes the other possible. Modern economic productivity and popular education have developed concurrently and both are requisite to the maintenance and improvement of the nation's economic well-being.

"The sum of the matter, then, is that the future of industry is so closely bound up with that of education that for industry to neglect education would be suicidal. The best service which industry can render to itself in the immediate future is not only to enrich the material resources available for educational purposes, to foster research and technical education, but to see to it that the whole structural system

⁴² Thorndike, Edward L. *Education As Cause and As Symptom*. New York: Macmillan Co., 1939. p. 82.

of education is not only left unimpaired through the inroads of industrial competition but is actually improved beyond anything we can imagine in the immediate present.”⁴³

⁴³ Todd, Arthur James. *Industry and Society*. New York: Henry Holt and Co., 1933. p. 457.



III.

KIND OF GENERAL EDUCATION FOR ECONOMIC WELL-BEING

In the past generation one era of world history closed; a new one is now opening. Apparently this new era will belong to those who can learn to work together intelligently, happily, and productively with the aid of modern science without exploiting natural resources, foreign peoples, or submerged classes. This would seem to require cooperative skill, a high degree of universal education, much scientific research, great capacity for self-government, and the ability to meet changes in the natural and social world without panic. If this conclusion is sound, one key to the future lies in education.

—LUTHER HALSEY GULICK.

The preceding chapter appraised the economic effects of education with special reference to production. It appears that education is one of the basic ingredients which entered into the fashioning of our remarkably productive

economy. The matter, however, cannot be left here. A further appraisal of the actual and potential economic effects of education is imperative. The number and complexity of the economic problems confronting the American people have multiplied. The inadequacy of traditional types of education in coping with these problems is increasingly apparent. The benefits which an industrial economy might realize from more intelligent planning and administration of education concerned with economic well-being appear to be great. Accordingly, this and several subsequent chapters will be concerned with policies and practices affecting the kind and the amount of education needed to maximize its effects in various areas of economic life.

General education has already rendered significant contributions to the evolution of our democratic industrial economy. It is important that these contributions be continued and increased. This may be done by clearly identifying them and by carefully examining how they may be made more effective.

Education Should Develop Broad Social Intelligence on Economic Problems.

The application of science to industry has created modern technology with its distinctive tool, the power-driven machine. Human and animal muscle have been largely displaced as the activating energy of man's tools. New sources of power have been tapped and harnessed to instruments of production which have no counterparts in past civilizations.

The evolution of machine economy has brought with it changes in the economic and social status of man on both the positive and negative sides of the ledger. Among the assets is a vast increase in economic productivity, removing the spectre of famine as a threat to western man's existence and permitting the consumption of a greatly increased

range and amount of commodities. Much of the most burdensome toil has been lifted from the backs of men and women, while the amount of leisure has been greatly increased. The labor of children has ceased to be an economic necessity.

These great gains, however, have been accompanied by serious liabilities. In the economy of the power-driven machine, workers no longer own and control their tools. Capital is relatively concentrated and those who control it exercise economic power of unprecedented scope. Extreme inequalities of wealth and income exist. Economic insecurity, involuntary unemployment, and poverty in the face of abundance, sometimes make the plight of the worker less satisfactory than it was under previous economies. Production far below potential capacity exists in the presence of great economic need.

It is not a simple matter to define the function of education in dealing with a period of transition marked by such profound and conflicting forces. It seems clear, however, that there is a job of interpretation and orientation to be accomplished, which is as difficult as it is socially important. The rank and file of citizens must achieve that degree of economic intelligence, permitting them to understand the meaning of the new forms which capital now takes, and to exercise the controls which will increase the assets and decrease the liabilities which it brings to mankind. This involves something more than a retreat to ancient shibboleths no longer appropriate in a machine economy.

In such a situation, economic education can no longer be conceived primarily in terms of individualistic action. The prosperity of factory workers, farmers, entrepreneurs, and other workers generally depends upon forces largely beyond individual control. It is not enough merely to train the individual and to develop efficient machines. If maladjustments in the organization and operation of the eco-

conomic system keep workers unemployed and machines idle, waste and unhappiness result. The problem of getting the existing system to run better is as important as making the elements which compose it more efficient. Accordingly, we must realistically face the relation of the organization of our economic and social system to the solution of our common problems.

*Education Should Aim at Better
Understanding of Industrial Relations.*

Under modern economy, characterized by great corporations and large scale enterprise, personal contact between employers and employees has been greatly reduced, mutual understanding is often lacking, and each group is apt to look on the other with distrust. While better relations between capital and labor will be a matter of evolution and growth, progress can be insured only if deliberate effort is made to improve these relations. Education can aid in laying the foundations for this improvement through helping to develop an attitude of openmindedness and a better understanding of the factors causing the present conflict.

Since our economy has reached a point where neither employers nor employees can be laws unto themselves, realistic problems of organized capital and of organized labor should be included in school and college courses. For the general well-being of society, before youths enter the workaday world they should know why combinations of capital and labor organizations exist, and should enter into objective discussions of the conflicting policies of these two groups and their effects on the general economic welfare. In later life, these same youths will be employees or employers. The sharpness of the antagonism between these two groups can be lessened if a background of understanding of the problems and objectives of both groups is

acquired before youths leave school. This means that education must give attention not only to problems of employers, but also to conditions of labor and of the laboring man—conditions that influence productivity quite aside from personal skill and diligence and constitute factors of economic efficiency, or inefficiency, over considerable periods of time.

The many voluntary functional organizations representing business, labor, agriculture, the professions, and other economic and social groups, play a large role in our national life. In some respects they are as important as the official agencies of government. The school should give youth a broad and dispassionate comprehension of the significance of these non-governmental organizations. Effective citizenship requires knowledge of what organizations exist, what their aims are, and how they seek to realize them.

Various phases of adult education need to be improved and extended. Education must carry the responsibility of getting the community together for discussion of its common problems.

Development of Cooperative Attitudes Tends To Increase Economic Well-Being.

Efficiency of business enterprises involves the effective cooperation of hundreds and even thousands of workers. If governmental action is to be confined to proper limits and is to be constructive in its total effect, citizens with a high degree of economic and social intelligence are essential. The importance of this factor has been stated thus:

“The worker’s world is one of complex social relationships: he works for and with people, cooperates with them, directs them, serves their needs. It is a world requiring healthy personality, intelligence, and an understanding of current social and economic problems. A program of edu-

cation that fails to cultivate these qualities will fall short of what it might or should accomplish.”¹

The technical and complex nature of modern industrial economy inherently involves social cooperation and controls far beyond those required in simpler economies. These controls are being brought into the picture in all industrial nations. The dictator supplies them in totalitarian countries. In democracies—if they are to remain democracies—they must come from the people. Social cooperation is a product of voluntary action on the part of many intelligent individuals. Social control develops with the consent and is subject to the judgment of informed citizens. A recent report of the National Resources Committee defined the issue in these terms:

“The basic problem facing economic statesmanship today can be stated as follows: How can we get effective use of our resources, yet at the same time preserve the underlying values in our tradition of liberty and democracy? How can we employ our unemployed, how can we use our plant and equipment to the full, how can we take advantage of the best modern technology, yet in all this make the individual the source of value and individual fulfillment in society the basic objective? How can we obtain effective organization of resources, yet at the same time retain the maximum freedom of individual action?”²

The problem is so broad in scope and so complex in character that no simple and quick solution is likely to be found. Education must supply one of the indispensable ingredients entering into a democratic solution. It is important that all schools and colleges recognize the problem and resolutely set about doing their share in meeting it.

¹ Edwards, Newton. Chapter VIII, “Social Development and Education.” *The Problems of a Changing Population*. National Resources Committee, Washington, D. C.: Government Printing Office, 1938. p. 215.

² National Resources Committee. *The Structure of the American Economy*. Part I. Washington, D. C.: Government Printing Office, 1939. p. 3.

*Education Should Further Raise the Level
of General Mechanical Competency.*

One of the important economic assets of our country is a high average of general mechanical competency. The typical citizen quickly masters the operation of simple and even complex machines. He does not retreat before their mechanical intricacies. Rather, he wants to learn how to use them, since he realizes the power they place in his hands. He knows that machines must be cared for or they become inefficient or break down. He understands the importance of lubrication and the replacement of worn parts. The ease with which the transition is being made from the old-style to the dial telephone in the United States would be impossible in a population with little mechanical competence. The millions spent in providing everything from electric gadgets to automobiles would be largely wasted among a people ignorant of modern machinery.

General mechanical competency is taken for granted in the United States. It is important to remember, however, that it is the product of more than a century of life and education in a machine age. Man is not born with such knowledge. This is strikingly illustrated many times a day in pre-industrial societies, where one sees populations trying to work without it. The natives along some of the rivers of South America do not know the use of such a simple tool as a saw. In the Orient, one frequently sees the most elementary mistakes made in the use of simple machines. A Russian peasant when told that there were more than 25,000,000 automobiles in the United States replied that this would be impossible. There could not be 25,000,000 persons who knew how to drive automobiles.

Most of the general mechanical competency of the people of the United States is a by-product of life in an industrial civilization. A part of it, however, comes directly from schooling. Girls are taught how to use and care for modern

household equipment. Boys learn to operate and care for basic machines used in working wood and metal. Children are constantly reading about new inventions and performances of modern machinery.

The schools should do a more comprehensive and conscious job in this area. Every child might properly be taught something about the gasoline engine, electric motor, mechanical refrigeration, radio, television, and other machines encountered in everyday experience. Some acquaintance with small scale home power machinery and with large scale industrial power machinery is important, if one is to have appreciation of the environment in which he lives and the elementary mechanical competency prerequisite to effective living in a technological age.

A new cultural pattern, the technological, is unfolding and bringing with it new attitudes of mind and new habits. It demands that the rank and file not only be familiar with the applications of science, but also that they acquire an experimental attitude and habits of precision. The role of education in advancing the pattern of technology and to some extent in shaping it, to the end that social well-being is served and not retarded by it, cannot be ignored.

Education Should Further Encourage Scientific Competency.

Perhaps the most distinctive characteristic of the modern world is its increasing dependence upon science. If the last three centuries are an index of what the next three are likely to be, science is destined to affect greatly, if not to remake, nearly all areas of life. Only as we understand the impact of science on society, can we shape the future course of events so as to maximize the benefits of advancing scientific knowledge for the satisfaction of common human needs.

Although the scientific method has achieved its greatest successes in the physical and biological sciences, it is increasingly being applied to social problems. Here its applications are more difficult, since hypotheses cannot so easily be put to experimental tests. Nevertheless, it appears that the social sciences, so freighted with human significance, are also destined to be remade by scientific inquiry.

Science, however, is not the complete answer to all of man's problems and aspirations. Scientific knowledge increases, rather than decreases, the importance of ethical values and social conscience. In the absence of these, science may become the means by which individuals and whole nations inflict suffering and destruction upon their fellow men.

On the one hand, youths should assimilate some of the basic truths of science and acquire an understanding of, and practice in, the application of the scientific method. They should be taught the importance of openmindedness and that observation, reflection, and comparison should precede conclusions concerning individual and social problems. This function is already increasingly being recognized as a primary objective in the teaching of the physical, biological, and social sciences in schools and colleges. As larger numbers of people acquire a scientific attitude of mind and come to use the methods of scientific inquiry, we may not only expect increased physical well-being, but also solutions to many current economic and social problems.

On the other hand, youths should learn that the discoveries of science become social assets or liabilities depending upon the way they are used. A great invention, for example, may be of no value if a powerful corporation is able to prevent its use through securing the patent rights and suppressing its manufacture. However, the too rapid induction of a new invention into industry, without taking account of its immediate effects on large numbers of work-

ers, may result in much unemployment and individual suffering.

The benefits of science should be for the many and not for a privileged few. One of the most urgent needs of our time is to make science and economic organization work with increasing effectiveness in the service of society. As this is accomplished there will be a more widespread enjoyment of the fruits of scientific discovery.

*Higher Education Should Aid the Public
in Studying Basic Economic Problems.*

The contribution of higher education in putting knowledge into action in many areas of modern life can be greatly improved. The extension programs already developed by some institutions of higher learning constitute a promise of what might be accomplished. Higher education should look upon extension work as a legitimate and socially crucial function. The demand for knowledge as a basis of human action increases in proportion as our civilization grows in complexity. This is nowhere better illustrated than in economics. Economic information will continue to be provided to the general public from a variety of sources, competent and incompetent, selfish and disinterested. Colleges and universities are admirably equipped, both as to competence and disinterestedness, to establish standards in this work. No agencies of American life are better fitted to play a leading role in short-circuiting the contact of knowledge and action in public affairs. By assuming this function and by creating facilities whereby it may be effectively exercised, higher education can enormously increase its social and economic effects.

The acceptance by higher education of responsibility for aiding the public in dealing with basic economic problems involves the observance of certain principles and practices which should characterize educational work at all levels.

Scholarship and competence on the part of teachers, the importance of distinguishing between accepted facts and knowledge as opposed to controversial theories and opinions, the presentation of divergent viewpoints, and emphasis on openmindedness and research are all implied.

The Economic Contributions of Education at Early Age Levels Should Be Further Developed.

Rudimentary learning through the three R's has supplied one of the basic ingredients of a technological society. Most economic enterprises of importance today presuppose that the rank and file worker can read and write. The factory employee must be able to read safety signs in workrooms. The truck driver who could not read traffic signs would indeed be a menace. The retail salesman must be able to record orders and addresses accurately. It is impossible to operate modern mass production industry, fabricating products with interchangeable parts, unless the average person can read instructions. The typical large business requires ready alphabetic and arithmetic literacy at a thousand crucial points. Market reports, agricultural research findings, and the ability to write for and to install machine parts lose most of their significance where farmers cannot read and write. Arithmetical training permits exact measurement to be woven into the very warp and woof of our industrial economy.

We take this contribution of the school for granted, since it has been supplied for several generations. It is important, however, that this economic essential be maintained and improved. Illiteracy and near-illiteracy should be removed wherever they exist. Reading and arithmetic should be more often focused upon economic problems and issues, and should increasingly involve a background of reality in the economic sphere. The advance of technological economy implies corresponding progress in alphabetic and arith-

metic literacy. This is a prerequisite to efficiency both as a producer and a consumer.

In considering the kind of education which tends to advance economic welfare, it is important that we do not think solely of education at the upper levels. The economic contributions of education in the elementary, kindergarten, and nursery schools are less direct and tangible than at the higher levels. It is probable, however, that they are of large significance. Psychological research in recent decades has emphasized the importance of the early years of life in developing well-rounded individuals capable of effective cooperation with others. Part of the clash of personalities, resulting in much individual unhappiness and social inefficiency, goes back to undesirable habits, attitudes, and emotional reactions established in early childhood.

Small families and the unfavorable environment in which modern life places many young children make organized educational facilities necessary. Unless these are provided, large numbers will be denied normal contact with their fellows and with many real life situations until after their personalities have been largely shaped, or misshaped. Accordingly, the significance for economic welfare of the right kind of education at early age levels should be given due consideration. Its importance increases with the growing interdependence and cooperative nature of modern economy.

The Schools Should Give Greater Attention to the Education of the Consumer.

The degree to which the consumption habits of a people are based on knowledge and intelligence vitally affects their economic well-being. Consumers are only beginning to recognize ways in which they can improve their knowledge and make their desires and influence effective. Consumer

demand, in the final analysis, determines the character and the quality of the goods and services produced.

As purchasers go about the selection and rejection of commodities and services they dictate what shall and shall not be produced. Production schedules are determined by the economic votes cast by buyers as they spend their dollars for certain commodities and do not spend them for others. The whole direction and pattern of a democratic nation's economy are a reflection of the ideals of its consumers. If the standards held by the consumers of a nation are pitched at a low level, production schedules will be planned accordingly.

The quality of the goods produced is also largely determined by the consumer. If shoddy goods and inferior services find a ready market, they will be made available in large quantity. Understanding and intelligence on the part of the consumer, therefore, determine both the kind and quality of what is produced.³ A study by the Twentieth Century Fund states the matter thus:

"Under our present economic system the main directing source of all economic activity is expenditure by consumers. To the extent that their choices are irrational and uninformed, the system fails to reach its optimum performance."⁴

The production of goods, sound in character and quality, is not enough. The intelligence of the consumer in the long run also determines whether the goods and services produced are so used that satisfaction and enjoyment are achieved. Poorly ordered purchasing may result in a loss of satisfaction which otherwise might be enjoyed. Malnutrition, for example, may result from a diet which does not

³ Montgomery, Donald E. "How Far Can Education Solve Consumer Problems?" *Next Steps in Consumer Education*. Columbia, Mo.: Stephens College, 1939. p. 27-41.

⁴ Stewart, Paul W.; Dewhurst, J. Frederic; and Field, Louise. *Does Distribution Cost Too Much?* New York: Twentieth Century Fund, 1939. p. 349.

include essential elements, even though the food purchased is of high quality. Well-ordered habits of purchasing and consumption, therefore, tend both to increase productive efficiency and to maximize satisfactions.

Modern Conditions Make Intelligent Consumption Difficult.

Intelligent action on the part of the consumer is vital to the well-being of a democratic economy. The current scene, however, presents many obstacles to such action. Even though the consumer possesses a scale of values which would justify the production of goods sound in character and quality, he may find it difficult to make his standards influential. The producer's estimate as to what consumer standards are may be poor, or he may not give them adequate consideration. The producer none the less backs his decision with a tremendous investment in advertising which in effect may considerably modify the consumer's standards of quality and taste in order to shape them to the commodity produced. When such a pattern operates, consumers find it difficult to make their standards effective.

The current scene presents other obstacles to intelligent consumption. The consumer is confronted with such a range and variety of products that the difficulty of intelligent choice is greatly increased. When the number of brands of the same commodity runs into hundreds, it leaves even the best intentioned purchaser mystified as to which is the best product.⁵ In the absence of effective testing and consistent standards of choice, the tendency is for the consumer to try first one brand and then another. This causes merchants to carry many more items than necessary, which adds to the cost of retailing and hence tends to raise prices.

The close personal contact which once existed between

⁵ Chase, Stuart, and Schlink, F. J. *Your Money's Worth*. New York: Macmillan Co., 1927. Chapter IX.

buyer and producer is usually absent today. The purchaser is not acquainted with the producer. He deals only with the retail seller, whose contacts with production are also tenuous. Accordingly, close acquaintance and personal integrity are not involved to the same extent as formerly. Rather, the buyer engages in an impersonal transaction in which his guide is often unsupported, conflicting, and meaningless claims of high-pressure sales organizations.

The current emphasis on advertising grows out of the fact that modern industry is highly specialized and is organized on a quantity production basis of many competing products. Consumer incomes are frequently not enough to purchase as much as industry can produce. Once the extensive organization and expensive machines required for mass production have been installed, it is imperative that mass sales follow. Anything less is likely to be business ruin. In such a situation, the desirability of continuing and increasing sales may obscure considerations based upon consumer well-being.

The desire for profit dominates sales effort. It seeks to influence consumers to buy things which yield the most profit. But these are not necessarily the articles which individuals most need and which they would buy if they were in a position to make intelligent choices. The education of consumers is frequently shaped by skillful sales organizations anxious to influence them to make purchases which promise largest business profits.

The sales organizations, which constitute a major division of many business concerns, bring to bear psychological and statistical research in breaking down the consumer's sales resistance. Insistent appeals of the advertiser confront the potential buyer at every turn. A great deal of advertising is more concerned with popularizing nationally-known brands than with giving significant consumer information. Copy-writers frequently employ catch phrases aimed at

quick conversions. It is estimated that nearly half a million persons are regularly engaged in advertising and sales promotion, and that the nation's yearly bill for advertising is more than one and a half billion dollars.

It is true that gains have been made in the ethical standards of advertising. Business itself has done much to bring this about and is continuing its efforts. Nevertheless, the odds against the consumer are still great. In the first place, he is an amateur, while the salesman is a professional. The consumer is urged on by every possible appeal to both his higher and baser motives. Some of his purchases occur but once in a lifetime. Many are made under pressure of time and need. He does not know where to obtain the information, if such is obtainable, which will permit him to secure articles which best meet the criteria of need, price, and quality.⁶

Consumer Education and Cooperation Are Essential in Modern Economy.

The conditions which make intelligent consumer action difficult, and the abuses which follow, constitute a social problem of first magnitude. Some argue that these conditions and abuses are inherent in industrialism, which thereby carries its own seeds of decay. It seems more likely, however, that these evils are largely the outcome of ignorance and lack of appropriate organization on the part of the consumer. Business itself suffers from the abuses which result from not supplying consumers with the right kind of information.

The rapid changes which have taken place in the production and marketing of goods and services have not been

⁶ For an example of one approach toward securing increasing cooperation among business, consumer, government, and educational organizations see report on: *Business-Consumer Relations Conference on Advertising and Selling Practices*. Boston, Mass.: National Association of Better Business Bureaus, Inc., 1939. 115 p.

matched by similar changes in the education of the consumer and by the development of cooperative methods whereby he may make his will and wisdom effective. Herein lies an opportunity which, fully capitalized, will permit the schools to make a major contribution to economic well-being.

While consumers' cooperation in the United States has not made the headway that it has in Europe, it is advancing steadily and slowly.⁷ It is quite probable that it will become relatively a more important form of economic activity than at present and hence deserves careful study. Realistic courses in consumer education will give attention to co-operatives and various types of consumer organizations.

Education has already demonstrated its value in this field. Only a beginning, however, has been made. Education for wise consumption needs further formulation, both as to basic aims and appropriate methods. Society must depend upon education, as provided in schools, colleges, and other non-commercial agencies, to supply many of the lacks in the consumer's knowledge. This is necessary if an appropriate antidote to false advertising is to be provided, and if the amount of such advertising is to be reduced. It is important, for example, that the consumer public come to understand the function of such agencies as the Federal Trade Commission,⁸ which concerns itself with such problems as: what percentage of the average retail prices paid by consumers for certain commodities goes to wholesale and retail distributors, quality of fruit and vegetables sold under various brands, short weighting in different types of stores, truth of information on labels, questions of unfair trade

⁷ United States Department of Labor. *Consumers' Cooperation in the United States*, 1936. Dept. of Labor, Bureau of Labor Statistics, Bulletin No. 659. Washington, D. C.: Government Printing Office, 1938. 207 p.

⁸ Coles, Jessie V. *The Consumer-Buyer*. New York: John Wiley and Sons., Inc., 1938. Part VII, "Government Aid and Protection for Consumer-Buyers."

competition, false and misleading advertising, definition of such items as "pure dye silk," and certain standardization activities of interest to consumers.

"Evaluation by trial, the most reliable means of assessing the worth of a good or service, has become less useful in making choices, because of the multiplicity of products and the continuous and rapid development of new ones. In these circumstances, consumers have increasingly had to rely for information on the claims made in advertisements, labels, and packages, and on the knowledge they could secure from sellers directly. Lack of confidence in the accuracy and reliability of information secured from these services has given rise to growing demands for the provision of knowledge by government."⁹

It is also important that consumers know what private industry through trade associations and Better Business Bureaus is doing to encourage dissemination of reliable information.¹⁰

*Quantity Production and Advertising Permit a
Higher Standard of Living for the Masses.*

In pointing out some of the evil effects on the consumer of mass production and marketing, the implication is not that these features of modern economy are basically unsocial. The opposite is the case. Quantity production by machine methods and mass distribution promoted through far-flung advertising are largely responsible for the greatly increased level of material well-being enjoyed by growing numbers since the advent of industrialism. It is neither feasible nor desirable to turn the hands of the clock back to the handicraft era. This fundamental economic fact should be made clear as one of the outcomes of sound economic education.

⁹ Lyon, Leverett S.; Watkins, Myron W.; and Abramson, Victor. *Government and Economic Life*. Vol. I. Washington, D. C.: Brookings Institution, 1939. p. 215.

¹⁰ *Ibid.*, p. 216.

The aim, therefore, is not to abolish the economic methods which have permitted such unprecedented progress toward general material well-being during the past century. Rather, the problem is one of correcting abuses, which now accompany, but which are not necessarily inherent, in mass production and marketing.

The Educated Consumer Possesses High Standards of Value and Taste.

The primary responsibility of education in this area is the development of sound standards of value. Technical training which permits the consumer to select a particular brand of a commodity is of secondary importance to decisions affecting the general categories of purchases, such as choices between automobiles or housing, good books and music versus travel, and observance of fashion versus larger savings. As Wesley C. Mitchell has said, "In a sense every consumer's good, from college to candy, is a rival of every other consumer's good besides being a rival of the savings bank."¹¹

Education designed to influence the character of wants and the level of tastes is particularly difficult. It is an outcome, not merely of consumer training, but of education in its broadest aspects. Value judgments derive from a wide range of factors. The ability to make them is the mark of a well-educated man. Development of this ability should be a pervasive objective of general education. Herein lies the case for the economic importance of cultural schooling. A broad background of knowledge concerning man and his world is essential if the individual is to achieve the intellectual and moral equipment prerequisite to wisest possible choices for the welfare of himself and others.

¹¹ Committee on Recent Economic Changes of the President's Conference on Unemployment. *Recent Economic Changes*. Vol. II. New York: McGraw-Hill Book Co., 1929. p. 875.

Intelligence, understanding, and appreciation must ever be the essential bases for effective social action and progress. The application of insight and knowledge to human affairs is one task which a rational society can never escape, one job which will never be taken over by machines. The lessons of all human history warn with united voice against emphasis on material things apart from, or at the expense of, spiritual and moral values which give material wealth its only final reality. Economics alone cannot solve questions of social policy.

"In recent times there has been a most unfortunate tendency to believe that economic solutions alone can loosen all our chains. . . . The main issue is not one that can be solved by economic theory. It is fundamentally a question of the moral attitude."¹²

Consumer education encounters serious difficulties in forces outside the school. The family, religion, custom and fashion, commercial agencies and advertising, and other factors exercise powerful effects in shaping consumption standards and wants. With some of these education may make common cause. Others immediately concerned with something less than the development of citizens with broad understanding and vision will impose obstacles. This calls for statesmanship, courage, and tact on the part of those responsible for educational leadership. The school in co-operation with other agencies of similar social purpose can stimulate appreciation of higher values and the better choices which depend upon them.

Specific Training in Major Areas of Expenditure Is Essential.

Consumer education in high schools and colleges is increasingly emphasizing planned spending involving such problems as rational distribution of individual and family

¹² MacFie, Alec L. *An Essay on Economy and Value*. London: Macmillan Co., 1936. p. 127.

incomes among various categories of expenditure, questions related to savings and investment, and procedures required to secure proper value for expenditures made.¹³ The swing from almost exclusive emphasis upon production in the home to problems such as the foregoing is wholesome. It seems probable that education of the consumer will be most effectively advanced to the extent that it focuses upon problems which he encounters in distributing his purchases among and within major categories composing the national budget. As people come to have an over-all view of their personal needs and decide on the relative importance of these, they plan their individual expenditures far more wisely.

An analysis of the distribution of income shows that about 90 percent of the sixty to eighty billion dollars of income received by the American people in prosperous years is expended for these items: food, clothing, shelter, health, education, travel, recreation and amusement, and savings. In the depression year 1935-36, when total consumer expenditures were approximately 50 billion dollars, the basic essentials—food, clothing, and housing—together accounted for 63 percent of this total. Operation and upkeep of the home—light, fuel, furniture, and similar items—and automobile expenditure accounted for another 21 percent.¹⁴

This summary picture of consumer spending has more meaning when supplemented by data showing consumer expenditures at different income levels. According to the National Resources Committee the lower 33 percent of consumers—those thirteen million American families and single persons living alone who have incomes of under

¹³ Howe, Harriet. "Source Material for Teachers and Workers." *Next Steps in Consumer Education*. Columbia, Mo.: Stephens College, 1939. p. 65-75.

¹⁴ National Resources Committee. *The Structure of the American Economy*. *Op. cit.*, p. 11.

\$780—accounted for only 18 percent of the total food expenditures in 1935-36, 16 percent of the total outlays for housing, and 12 percent of those for clothing and medical care. Families and individuals constituting the middle 33 percent of income groups—those with incomes of \$780 to \$1450—consumed the following percentages of the national total of the following items: food, 32 percent; recreation, 22 percent; and automobiles, 20 percent. It was the upper third—those with incomes of \$1450 or more—however, who dominated the consumer market. “They accounted for half of the total food consumption of the Nation, considerably more than half of shelter, clothing, medical care, and personal expenses, and from 71 to 77 percent of recreation, automobile, and education expenditures.”¹⁵

While earnings of those at the lower income levels must be increased before an adequate standard of living is achieved, more intelligent expenditure of present incomes will help some. Consumer education has already made progress in equipping citizens of all income levels for wiser purchasing of goods.

Much remains to be done. The direction of progress will be suggested in considering the major areas of expenditure.

Education Is Needed for Wiser Purchasing and Consumption of Food.

The production of a sufficient quantity of food has consumed the major portion of man's labor throughout history. It still does in much of the world today, and until recently it did so in this country. A century ago 77 percent of the working population of the United States was classified by the Federal Census under agriculture, mainly concerned with food production. In 1930, 21.4 percent of gainfully employed persons were so classified.

¹⁵ National Resources Committee. *Consumer Expenditures in the United States, Estimates for 1935-36*. Washington, D. C.: Government Printing Office, 1939. p. 11.

The shift from an economy in which the mere production of food absorbed most of man's labor to one in which it requires a minor fraction of his energy is the outgrowth of the application of science and technology to methods of food production. This transition is one of the dramatic events in the economic progress of mankind.

From the standpoint of quantity the food problem has been largely solved in this country. While account must be taken of the number of workers engaged in the processing and distribution of food, the production of raw foodstuffs absorbs a rapidly declining fraction of the working population.¹⁶ Even so, the food consumption per capita in the United States verges on what would be considered gluttony in many areas in the world today. Further progress in economical methods of food production will doubtless be made. Research in this area foreshadows developments which now seem fantastic. Compton, for example, in writing of future developments of research, states:

"Perhaps the new development of 'chemical agriculture' in which farm products are produced without soil by planting them so that their roots are bathed in appropriately nutritive chemical solutions can be developed to remove the fear of food shortage which now causes so much anxiety in several nations and will at the same time provide a diet which will be a distinct improvement on that now customary."¹⁷

A present difficulty is that more and more foods are subjected to processing which adds to cost while reducing nutritive value. Vitamins and minerals are lost and decreased. Some foods may, on the other hand, have values added to enrich them. For example, calcium as well as vitamins can be added to bread.

¹⁶ Stewart, Paul W.; Dewhurst, J. Frederic, and Field, Louise. *Op. cit.*, p. 8-11.

¹⁷ Compton, Karl T. "Looking Forward in Research." *Industrial and Engineering Chemistry* 31:1214; October 1939.

While food production would have to be substantially increased if everyone were to have a liberal diet,¹⁸ it appears that the primary problem in the United States today is not greater production but wiser purchasing and consumption of food, so as to make the quality and variety of diet satisfactory. This will involve some increase in the earnings of lower income groups. The 42 percent of families in the United States receiving less than \$1000 per year will need larger annual incomes if adequate food, as well as other items of an acceptable American standard of living, are to be attained. Wiser purchasing by low income families would also somewhat improve the situation. Dietitians point out that it is difficult to state food needs in dollars because of fluctuations of food costs and variations between different parts of the country. Dietary needs can best be stated in amounts of different types of foods required per person.¹⁹

For many of the American people the main problem is the wiser spending of money already available for purchase of food. A committee of the White House Conference reported that of 45,000,000 children, 6,000,000 were improperly nourished, and that poverty was not the most important cause.²⁰ The expenditure in prosperous years of nearly \$20,000,000,000 for food, if properly used, would come close to providing adequate nourishment for all.

Many housewives are inefficient in the expenditure of the family food budget. Foods of little nutritive value in proportion to their cost are often purchased. The proportion of the typical diet made up of meat, starch, and heavy

¹⁸ Leven, Maurice; Moulton, Harold G.; and Warburton, Clark. *America's Capacity To Consume*. Washington, D. C.: Brookings Institution, 1934. p. 121-124.

¹⁹ For a discussion of many topics concerning food buying not touched on here see: Monroe, Day; Kyrk, Hazel; and Stone, Ursula Batchelder. *Food Buying and Our Markets*. New Edition. New York: M. Barrows and Co., 1938. 430 p.

²⁰ White House Conference on Child Health and Protection. *Addresses and Abstracts of Committee Reports*. New York: Century Co., 1931. p. 8.

desserts is frequently too large, while the proportion of vegetables and fruits is too small. The result is often an expensive but inadequate diet from the point of view of proper nutrition. Experience shows that pupils can be taught with success to select foods and plan meals on different economic levels.

In spite of the coming and going of food fashions and fads, there is a body of reliable fact based on scientific dietary research which can be made the basis of needed instruction. Education at all levels should vigorously set about making this knowledge the common and functioning possession of all. Another generation should not be allowed to grow up without having a clear understanding of the increase in physical well-being and general economic welfare which can be brought about by proper purchasing and consumption of food. The effects of poorly ordered consumption are cumulative, since the offspring of malnourished parents often lack the vigor to provide a better environment for their children.²¹

Research indicates that dietary custom exercises profound influence on the physical constitution of a people. For example, an investigation which compared two tribes living side by side in East Africa, one of which subsists mainly on milk, meat, and freshly drawn blood and the other on cereals, roots, and legumes, shows that the full-grown male of the first tribe is on an average 5 inches taller, 23 pounds heavier, and has 50 percent greater muscular strength than the full-grown male of the second tribe.²²

A well-known nutritionist summarizes the relationship between food habits and health as follows:

"It is the common experience of nutrition laboratories that earlier maturity, greater size and vigor, and deferred

²¹ Waite, Warren C., and Cassady, Ralph. *The Consumer and the Economic Order*. New York: McGraw-Hill Book Co., 1939. p. 1.

²² Orr, J. B., and Gilks, J. L. *Medical Research Council Report*, No. 155. London: H. M. Stationery Office, 1931.

old age result from diets liberally enriched with minerals and vitamins.”²³

*Education Is Needed for Wiser
Expenditure for Clothing.*

The American people spend nearly \$10,000,000,000 in a prosperous year on clothing. This is probably sufficient, if properly spent, to provide adequate clothing for all our people. Again, it is true that sufficient clothing for that fraction of families receiving incomes below an acceptable American standard will not be possible until those incomes are increased. For the majority of families, however, emphasis needs to be placed upon more intelligent spending of the budget already available for clothing.

Wiser expenditure in this area waits upon better education. To begin with, the rank and file of American people need to be brought face to face with a realistic interpretation of the emphasis which commercial advertising places upon frequent changes in style. Extreme and bizarre fluctuations in clothing fashions threaten to become a racket. Constant shifts in style are not only a waste in themselves but they also result in acceptance of poor quality with less protest. The correction of this situation need not involve regimentation in dress or disregard of the esthetic element. Education would eliminate frequent fashion vacillations and would permit rational fulfillment of every purpose of clothing—whether it be protection, health, appearance, or even display.

Nystrom after extensive study of the economics of fashion writes:

“. . . education of the public in art, in hygiene or in utility may serve as a powerful force against the introduction of fashions which do not correspond or fit in well with the principles as laid down in this education. On the other hand, new fashions that do accord with the important prin-

²³ Rose, Mary Swartz. "Racial Food Habits in Relation to Health." *The Scientific Monthly* 44:264; March 1937.

ciples of art, hygiene or utility as taught in these branches, may receive both encouragement and acceleration.”²⁴

Good design in clothing is a proper objective of a civilized culture. Good design, however, does not require some of the characteristics of contemporary clothing. Men's collars and belts are frequently too tight from the point of view of health, to say nothing of comfort. Most shoes bind the feet unnecessarily, and the design of women's shoes and improper fitting of children's shoes are a basic cause of much serious foot malformation. Through a psychologically good approach and through arrangements with local dealers to carry attractive and comfortable hygienic shoes, the women's physical education department in one college brought all girls on the campus willingly to adopt sensible shoes. There are ways in which sound education and honest retailing can be brought into constructive cooperation. This need not involve the use of the school as an adjunct to the commercial fashion show.

In dealing with expenditures for clothing, the school is concerned with elements of human culture which are often stubborn as well as irrational. Perhaps it is impossible to make people intelligent about clothing, but this conclusion should not be finally accepted until education has organized a well-planned, systematic, and aggressive campaign to bring this very thing about. Such a campaign should become one of the major phases of consumer education. From such an effort schools and colleges might expect to make a major contribution to human happiness and human well-being.

Education Is Needed for Wiser Purchasing of Shelter.

We spend from \$12,000,000,000 to \$18,000,000,000 on housing, furnishings, and equipment in a prosperous year.

²⁴ Nystrom, Paul H. *Economics of Fashion*. New York: Ronald Press Co., 1928. p. 27-28.

Intelligent use of such vast sums could achieve far better results in providing efficient and attractive shelter for the American people.

One study has shown that some of the expensive apartments in New York City have little more light or quiet and have more fumes from motor cars and more noise than some slum blocks. The people who live in these expensive apartments have large incomes and pay large rents. In many respects, however, they have poor housing. All housing problems are not necessarily solved by merely increasing income.

One group comments as follows on the economic significance of proper housing:

"Light, air and room for recreation in places of work and residence are essential to economy in the city, because they are essential to preserve the physical and mental energy of the citizens. . . . Most of the defects of overcrowded building that lower vitality and therefore lessen efficiency are preventable. In so far as they are not prevented they lessen the financial prosperity of the city and its economic attraction. Therefore the most healthful living conditions that are practical in the city are essential to its prosperity and economic attraction."²⁵

It will take fundamental replanning of cities to get adequate light, air, quiet, and play space for housing. The concept of community planning should be made the basis of an important phase of consumer education. Its relation to the provision of healthful and attractive housing should be a part of every high-school graduate's education. Such a requirement is far more defensible than some now included in the secondary-school curriculum. In rural and suburban areas, consideration should also be given to housing problems.

²⁵ Adams, Thomas. *Regional Survey of New York and Its Environs*. Vol. VI. "Buildings: Their Uses and the Spaces About Them." New York: Regional Plan of New York and Its Environs, 1931. p. 145-146.

How to provide sanitary, comfortable, and attractive housing at a purchase price or rental low enough to meet the needs of hundreds of thousands of low-income families is a problem which is beginning to attract national attention. So far little has been done to solve the question of better housing for the lowest-income group. This requires that not only buildings but also lighting fixtures, plumbing, and other modern conveniences be inexpensive, safe, sanitary, durable, and of plain but good design. Drastic changes will have to be made in methods of land use, manufacturing, selling, construction, financing, and other aspects of providing shelter before good housing will be available at a price within reach of all. Before these improvements can be brought about, great changes will have to take place in public knowledge and attitudes. This is a responsibility for educational agencies of all types, both formal and informal. The task of the school is to lay the foundations in awareness of these problems, to consider various approaches to their solution, and to develop constructive attitudes toward them.

The same progress has not been made in applying the techniques of mass production and marketing to the provision of shelter as has been made in other areas of American economic life, such as production of food and provision of transportation.

The United States Housing Authority, basing its conclusions on extensive studies, estimates "that the country today needs 6,000,000 new dwelling units and that by 1950 increases in the number of families and the depreciation of existing homes will require an additional 10,000,000 dwellings, so that, in all, about 16,000,000 new dwellings will be required by 1950."²⁶

In spite of demonstrated need for a great increase in housing facilities of a desirable type, action in this area

²⁶ The New York Trust Company. "Housing and Homes, Problems of Public and Private Shelter." *The Index* 19:41; Autumn 1939.

lags. Why is this so? This question needs to be dealt with in schools and colleges. Is it true that combinations in restraint of trade are making it impossible to bring the cost of building materials down to a level appropriate to a free enterprise order? What is the relation of the policies of the building-trades unions to this whole matter? No dogmatic answers to these questions are suggested. It is urged, however, that better housing for the American people will involve an intelligent examination of just such questions. Pupils should also face objectively such practical problems as the desirability of owning or renting a home, as related to income, stability of employment, and possibility of gaining or losing on investment.

The cost of housing is an important item in the nation's budget. Effective education in the field of shelter will bring larger returns for this expenditure. An intelligent and courageous acceptance of responsibility in this area by the schools will contribute much to the economic betterment of the American people.

Education Is Needed for Wiser Purchase of Health.

Our yearly expenditures to get well or to stay well vary from \$2,500,000,000 to \$3,500,000,000. In spite of this large expenditure, many individuals lack sound health knowledge, and adequate health services are either not available for all or are not within their financial reach. Education in this area involves two phases of instruction, one dealing with personal and individual hygiene and health, the other with cooperative means of securing various services affecting sickness and health.

One of the areas in which schools and colleges have made most substantial progress in the last fifty years is the teaching of individual health and physical education. More and more emphasis is being placed on positive health and pre-

vention of disease and accidents. Education has made contributions to health victories won in recent decades. The most striking measure of improvement in longevity is the increased expectation of life at birth. "In 1901 less than nine out of every ten white male babies born alive survived to reach their first birthday. However, by 1937 health conditions had improved to such an extent that at least nine out of every ten newly born will attain age 24."²⁷

Much less attention has been given to the problem of providing adequate health service for all people. Many problems of health and hospital insurance and of group provision for health services of all kinds have still to be solved. The schools should not be dogmatic or authoritarian concerning the solution of these problems. Evidence available and types of proposed remedies from all competent sources should be presented and carefully considered. This instruction should provide a sound basis for achieving adequate health services for all.

It is probable that a better informed public could buy better health services for the money that is now spent. Certainly waste involved in the millions expended annually for questionable and deleterious patent medicines and quack nostrums could be greatly reduced.

The present method of paying for most medical services needs to be carefully studied. The manner in which medical costs occur leads to hardship and inability to meet them. Hospital and doctor's bills are likely to come all at once, when the individual's earning power is seriously lowered. Application of good budgetary practice or of insurance principles should be carefully studied as possible solutions. It is more than likely that a better informed public as to individual and cooperative means, whereby health may be conserved, illness prevented and sickness cured, would result in more and wiser health expenditures.

²⁷ Metropolitan Life Insurance Company. *Statistical Bulletin* 20:1; August 1939.

Health is a purchasable commodity, especially when emphasis is put on preventive measures. Education can make a major contribution to economic welfare by extending and improving instruction for wiser expenditures for health.

*Education Is Needed for Better Discrimination
in Avocational Expenditures.*

In the judgment of the Committee on Recent Economic Changes in the United States, "few of our current economic developments have made such widespread changes in our national life or promise so much for the future as the utilization of our increasing leisure."²⁸ The total expenditure of the American people for recreation, amusement, luxuries, and travel, including expenditures for passenger automobiles, is in the neighborhood of \$10,000,-000,000 in a prosperous year. This is one of the largest and most rapidly growing items of the national budget.

It is probable that less discrimination is used in making this expenditure than in any other major item. This is not surprising. It is only in recent decades that the conquest of the frontier and the application of power and the machine to the production of the necessities of life have freed a considerable proportion of the time of the rank and file for avocational pursuits. It takes time for people to learn to play wisely and well, as it does to learn to be efficient workers or to engage in any other important area of civilized activity.

The use of the passenger automobile as a means of recreation is a good illustration of the trend of American civilization with respect to the use of its leisure time and recreational expenditures. The passenger automobile accounts for nearly half of the nation's expenditures under this general category. This form of recreation is almost wholly a development of the twentieth century. The

²⁸ Hunt, Edward Eyre. *An Audit of America*. New York: McGraw-Hill Book Co., 1930. p. 179.

millions spent for advertising the automobile and gasoline have focused largely upon selling more cars, attaining greater speed, and covering prodigious distances in short periods. As a result, a tremendous amount of human energy and money is consumed in relatively aimless-driving about the country. Some promising steps have been taken in national and state parks, but only a good start has been made.

Schools and colleges have given some attention to the wise use of leisure. Results already obtained are both significant and encouraging. Far larger dividends are possible. For example, education has given little attention to better recreational use of the automobile. The schools of every community, in cooperation with other appropriate agencies, should organize information about how to reach, and to get most enjoyment from visiting industries, points of economic, historical, or scenic and esthetic interest, and other features usually overlooked by the speeding motorist. A recreational guide to the resources of every community should be prepared. Material from these guides, together with information about ways of preserving and improving public recreational facilities, should be included in the regular school curriculum. The aim should be to give both youth and adults a background of appreciative interest in the remarkable resources of the nation which will give reasonable point and discrimination to automobile travel.

The schools have yet to focus attention upon the improvement of the esthetic appearance of our highways. The typical cycle of development of express highways has been the expenditure of large sums to straighten, widen, and pave these routes, and then to permit them to become cluttered with unsightly "hot-dog" stands, billboards, and other affronts to beauty and threats to public safety. The beautiful parkways, which are beginning to appear in the environs of New York City and in certain other sections, suggest how much greater the enjoyment

from motoring might be, if our highways were developed according to plan and protected from short-sighted commercialism. Landscaped highways with trees, shrubs, and flowers are a gracious contribution of a few communities to motor travel. In this situation, education has an opportunity to improve tremendously the returns which the American people receive for one of their large expenditures.

Between one and two billion dollars of expenditures are for admission to theaters, movies, sporting events, and similar activities. Education has more realistically faced its responsibilities in this area. For example, research and school activities have been focused upon the problem of developing greater discrimination regarding motion pictures. Part of the improvement in this important amusement area can be credited to this effort. The most significant victories, however, will probably be won in the future.

Education should consciously and vigorously set out to see that the American people get higher and more enduring satisfactions from their large expenditures for recreation. The returns from money expended for recreational travel, motion pictures, theaters, sporting events, radio, reading, handicrafts and creative arts for amusement, and other leisure time activities should be taken account of by consumer education.

Many of the finer human satisfactions involve little if any money outlay. Physical education in many schools and colleges has been too much built around team sports, which are neither feasible nor healthful to carry on during adulthood. The fine art of walking might be the basis of recreational and physical returns, far more valuable and far less expensive, if our schools and colleges had the genius to bring this about. Art instruction, science teaching, courses in music, English, and foreign literature still have to achieve their greatest potentialities in developing a wide range of lifelong and inexpensive interests.

*There Is Need for Better Understanding of
the Significance of Public Expenditures.*

The expenditures of the American people for public enterprises at all governmental levels in 1938, exclusive of debt payments, approximated \$16,000,000,000.²⁹ This includes \$3,085,000,000 for relief, welfare, and social security; \$2,413,000,000 for education; \$1,670,000,000 for highways and streets; \$1,622,000,000 for national defense; and smaller amounts for other items.

The expenditure of this sum is of major economic significance, because of the amount involved, the nature of the goods and services which it buys, and its repercussions on private enterprise. Schools and colleges should do much more to make the American people intelligent concerning the social and economic significance of public expenditures.

Consideration of fiscal affairs often proceeds in a fog of unsound economic assumptions and misinterpreted statistical material. The result too often is public confusion and indifference rather than understanding and wise control of fiscal policy. The science of public finance in many branches has developed to the place where it offers a foundation upon which sound education in this sphere may be based. Many generalizations now accepted by competent students of public finance play little part in the fiscal thought of most citizens. Yet these guides to intelligent public action in their basic outlines are not beyond the comprehension of high-school youths of average capacity.

Reduced to its essentials, public expenditure is cooperative buying. When properly ordered, public outlays buy goods and services essential to the general welfare, which if purchased under private auspices would be inadequate in amount and quality or would involve increased cost. Taxation is not a device whereby sums of money are taken from citizens and then thrown into a bottomless well with

²⁹ U. S. Treasury Department. *Bulletin*, August 1939. p. 4.

no returns to the individual or the public in general. It is the means whereby free citizens finance the cost of goods and services, which they consider essential to their general well-being, and which cannot be so readily or economically furnished by private enterprise. Certain types of taxes are recognized as equitable and effective and others are not. Equitable and efficient systems of taxation can be developed, wherever principles and procedures generally recognized by competent authorities in this field, are adopted.

Some school systems are beginning to give the attention to problems concerning the administration and financing of public enterprises which the nature and size of the job require. There is every reason to believe that problems in this area will increase in importance. Citizens need careful preparation for their role as cooperative purchasers under governmental auspices. Wisdom in this respect vitally affects the character of the commodities and services which they will receive for taxes paid. It will also determine the nature of the influences on private enterprise which result from fiscal operations. Education can significantly affect economic well-being by increasing consumer intelligence concerning public expenditure.

Education Is Needed for Wiser Saving.

In 1936, \$6,000,000,000 or 10 percent of the income of the American people went into savings. Saving performs two essential functions in modern society. It provides, in part or in whole, for the security of the individual and also for new plants and equipment as industries expand and change.

The average citizen in providing for individual and family security needs far more knowledge than he now has. Some school systems have done significant pioneering to meet this need, but a comprehensive and universal program of instruction has still to be developed.

All citizens early in life need a plan for saving against emergencies and old age. The role of recent social security legislation should be fully explained. The importance of small but regular savings and the power of compound interest should be impressed on all. Functions of savings banks, of various types of insurance, and of other channels for saving should be dealt with, including specific attention to practices and types of agencies which involve undue risk for the individual investor. An understanding of the relation between risk and rate of return in investments would help to protect hard earned savings from being stolen by get-rich-quick and other confidence games. The principle of diversification should be explained and its use by the individual investor illustrated.

Any appreciable savings will be extremely difficult on the part of a considerable proportion of the population receiving sub-standard incomes. Even though it is recognized that this situation must be fundamentally corrected, education for saving is desirable for all citizens. Children raised in families of low income probably need such training in order that they may wisely use higher incomes if they come to have them. Courses in consumer education can also show how family income may be conserved by making needed repairs in buildings and taking proper care of food, clothing, and equipment. Family morale may be developed if all members cooperate in conserving the family income.

Better comprehension of the role of savings in providing capital for industrial development is needed. Here we are concerned with one of the fundamental elements of the capitalistic order. Moulton appraises this factor as follows:

"Any nation which fails, for whatever reason, to replace or increase its capital supply will in the long run cease to raise the plane of living of the people and will suffer eco-

conomic retrogression. The growth of capital, it bears repeating, has served to multiply man's power over nature a thousand-fold; it has made possible our material civilization."³⁰

It is undesirable to be dogmatic in this complex area. It should at least be understood, however, that one's savings and the use made of them have great social as well as individual results. The investigation of the Brookings Institution states:

"Our capacity to produce consumer goods has been chronically in excess of the amount which consumers are able, or willing to take off the markets; and this situation is attributable to the increasing proportion of the total income which is diverted to savings channels. The result is a chronic inability—despite such devices as high pressure salesmanship, installment credits, and loans to facilitate foreign purchases—to find market outlets adequate to absorb full productive capacity."³¹

As rapidly as the conclusions of economic theory and research permit, the social results of savings should be understood, at least in their elements, by the rank and file.

The task of better informing the public concerning the significance of saving, both as it affects the individual and society, is one which the schools should resolutely undertake. They may thereby make a major contribution to economic well-being.

Consumer Education Has Its Technical Phases.

The education of the consumer in the field of values and taste is prerequisite to all intelligent buying. It is the basis upon which he makes major decisions among and within the categories of expenditure. The character and patterns

³⁰ Moulton, Harold G. *The Formation of Capital*. Washington, D. C.: Brookings Institution, 1935. p. 8.

³¹ Moulton, Harold G. *Income and Economic Progress*. Washington, D. C.: Brookings Institution, 1935. p. 46.

of productive effort take their shape in large measure from these decisions as do also the nature and quality of the satisfactions derived by consumers from purchases made. This chapter thus far has dealt with this foundational phase of consumer education.

Technical training, which permits the consumer to select the best grade or brand of a particular commodity, is none the less of large importance. Much economic waste today results from the fact that the consumer lacks definite information as to the quantity and quality of a commodity which he should receive for a given price. Better informed, he would refrain from purchasing goods which he is now willing to buy, or at least would demand a lower price than he pays.

The effects of ignorance on these matters do not end when the individual consumer buys goods of poor quality or pays excessive prices. Slichter has pointed out the far-reaching consequences of consumer ignorance.³² Unintelligent buying permits poorly managed concerns to survive. Production does not concentrate in the hands of enterprises which are the most efficient economically as rapidly as it would otherwise. Consumer ignorance, accordingly, is equivalent to a subsidy to inefficient production, and much capital and labor operate in plants where they are less efficient than they would be in a market of intelligent consumers.

It is neither possible nor desirable to be too specific as to the technical education which the consumer should receive in the light of conditions outlined above. One of the first objectives should be to give better appreciation of the plight of the individual consumer and of the factors responsible. He should realize the need for individual training as well as for cooperative action designed to

³² Slichter, Sumner H. *Modern Economic Society*. New York: Henry Holt and Co., 1931. p. 552-553.

correct the worst results of consumer ignorance and lack of organization.³³

There has been considerable emphasis on work designed to train the individual in technical methods of distinguishing between various grades of a given commodity. This phase of consumer education is desirable, particularly when commodities frequently purchased are involved. It soon reaches the point of diminishing returns, however, because of the amount of technical information which must be imparted, the time involved in applying it, and for other reasons.

Accordingly, a demand is arising for more objectively graded retail goods which meet specifications already developed and employed in some instances by trade and governmental agencies. The drafting of meaningful specifications may be further advanced through cooperative action of manufacturers and consumers. Too often today the manufacturer or dealer, through the use of relatively meaningless trade-marks and brands and high-pressure advertising, seeks to train purchasers to ask for his particular brand. Yet goods of different quality may be sold under the same brand, or goods of the same quality, under different brands. Some manufacturers would like to keep consumers so engrossed with the details of buying particular brands, that they would lose sight of such larger consumer problems as tariffs, monopolies, and taxes.

Industrial buyers and governmental agencies use objective tests of products, expect the observance of codes of ethics, and otherwise purchase with adequate guidance. The individual consumer needs similar aids. The time when he will enjoy them could be hastened through various types of consumer organization. He should know some of the means whereby the individual can economically obtain

³³ Cassels, John M. "The Future of Consumer Education." *Business Consumer Relations Conference*. Boston, Mass: National Association of Better Business Bureaus, Inc., 1939. p. 38-42.

results of research as to the quality of products among which he must choose. The technical training and orientation of consumers in areas such as those illustrated above would contribute significantly to the economic welfare of the individual and of society as a whole.

*The Educated Consumer Is Sensitive
to His Social Responsibilities.*

Another major aim of economic education should be to make the typical citizen sensitive to his social duties. He should understand that the economic votes, which he so lightly casts in the course of his daily purchasing, largely determine the character of production. He should realize that modern mass production and marketing have developed a series of pitfalls into which he may easily fall as he goes about his buying.

All citizens should be sensitive as to their interest in and responsibility for the working conditions under which their purchases are produced and distributed. This will involve consideration of the relative importance of human rights as opposed to those dictated solely by motives of economic profit. The individual commercial concern is handicapped in providing desirable conditions of labor, which involve increased cost of production, unless it finds support on the part of consumers.

The role of group and cooperative action in this area needs unbiased and realistic examination as a phase of consumer education. The larger and proper objectives of collective bargaining are too often lost sight of in the welter of industrial conflict. It is the duty of the school to give well-rounded information and orientation in such matters. Thus may be gained a background essential to intelligent appraisal of various means whereby the consumer may discharge his social responsibilities. The duties of economic citizenship take rank with those of political citizenship.

This chapter points out some of the economic effects of general education. It suggests that "a continuation of the present economic system may depend on the rapidity with which educational institutions can equip individuals capable of working in the system and making the system work." It proposes that general education for increased economic well-being will develop broad social intelligence on economic problems, aim at better understanding of industrial relations and conditions of labor, cultivate co-operative attitudes, raise the level of general mechanical and scientific competency, increase the effectiveness of rudimentary learning, consider habits and attitudes developed at early age levels, and give greater attention to problems of the consumer. Consumer education should seek to develop high standards of value and taste; aim at wiser expenditures for food, clothing, shelter, health, and recreation; develop better understanding of the significance of public expenditures and of individual savings; give some technical information to aid in selecting the best grade or brand of a particular commodity; and stress the social responsibilities of the consumer.

As education is focused more directly upon areas of real life, of which the economic is an important one, it will make a stronger appeal to pupils. In practically all studies of why children leave school, lack of interest ranks next to economic reasons, which means that for large numbers the schools have failed in part. The approach to this problem is clearly one of adapting school programs to youths' interests and needs. As general education is focused on the common problems of our people, it should have the economic sector of life clearly in mind. A properly conceived general education will make many important contributions to the economic efficiency and welfare of the nation.



IV.

KIND OF OCCUPATIONAL EDUCATION FOR ECONOMIC WELL-BEING

*The essential unity of human life and its activities
suggests the desirability of developing vocational
education along with all other aspects of education.*

—EDUCATIONAL POLICIES COMMISSION.

Existing Provisions for Occupational Education Need Careful Appraisal.

Better school programs have long included activities aimed at increasing the efficiency of youths in selecting occupations and preparing for occupational life. In many school systems this work should be extended and more closely related to individual interests and employment opportunities. The critical nature of our economic problems testifies to this need. In some school systems occupational education is almost wholly lacking. When provisions for such education exist, they often find little justification

in the types and distribution of employed workers. It is the exceptional school system which has both the information needed in developing a program for occupational efficiency and the facilities for carrying it out.

Sound economic returns do not result from just any kind of education. Such returns will be realized only if provision for occupational education is based upon an optimum mixture of factual information and social vision. Vocational education should not be limited to the agricultural and industrial fields. The distributive occupations, personal services, government service, and many other occupations, as well as the professions, can all be rendered more efficient by the provision of adequate education.

Much more economic research, educational experience, and careful thinking are necessary before the outlines of adequate occupational training can be sketched with definiteness. There are some guides to the future, however, and the types of information and planning required are becoming increasingly clear.

Occupational Education Should Be Based on Economic and Vocational Trends.

Our vision should not be too much limited, either as to time or scope, in developing education for occupational efficiency. For more than a century economic production has increasingly involved intelligence, science, power, and technology, while ignorance and mere muscular force have been on the decline. This is true whether agriculture, manufacturing, or the professions are considered. This long-term trend is synonymous with the tremendous social phenomenon commonly designated as the industrial revolution. This trend over an even longer period is epitomized in the following quotation:

“From the building of the Pyramids down to the present day, the proportion of the world’s work of the nature of

mere physical digging, pushing, carrying, lifting, and hammering, by the exertion of muscular force, has almost continuously diminished. From the cutting of the canal at Corinth to the cutting of that at Panama, the share of the thinker, the architect, the designer, the draftsman, the engineer, the toolmaker, the accountant, and the clerk, in every productive enterprise has become steadily larger; and the proportion of workers so engaged has grown accordingly.”¹

Is this trend likely to continue in the future? The best answer to this question is found in recent investigations dealing with vocational trends. Let us consider the situation in manufacturing and allied industries where mechanization is most advanced.

Manufacturing Requires More Skilled and Semi-Skilled than Unskilled Workers.

The trend toward the use of automatic machines in manufacturing industries, involving limited training on the part of operators, is sometimes cited as an indication that there is a growing demand for unskilled labor. This assumption fails to take account of several important factors. In the first place, manual and manufacturing workers constitute a declining proportion of all gainfully employed. Kimball’s investigation in New York State points out that from 1910 to 1930, there was a decided trend away from manual types of occupations with a striking “loss in manufacturing and mechanical industries.”² On the other hand, there was a substantial gain in professional workers, proprietors, managers, clerks, and kindred workers.

¹ Beard, Charles A., Editor. *Whither Mankind?* New York: Longmans, Green and Co., 1928. Chapter V, “Labor,” by Sidney and Beatrice Webb. p. 140.

² Kimball, Bradford F. *Changes in the Occupational Pattern of New York State*. Educational Research Studies, 1937, No. 2. Albany: University of the State of New York, 1937. p. 152.

Between 1919 and 1929, the actual number of wage-earners in manufacturing industries remained practically the same, in spite of the fact that there was increased use of machines and that 1929 was a year of unusually high employment.³ The Census data show that there was a 2 percent decrease among employees in manufacturing between 1920 and 1930, while gainfully employed workers as a whole increased.⁴ It appears, therefore, that the proportion of all workers engaged in manufacturing, where a high degree of mechanization is usually involved, is decreasing. One cannot base general conclusions, concerning the types of workers required in other occupations, upon trends affecting a minority and declining percentage of all workers.

Even if consideration is confined to manufacturing, however, it does not appear that the demand is primarily for unskilled laborers. The study of the mechanization of industry by the National Bureau of Economic Research⁵ estimates that wage-earners in manufacturing as a whole involve about one-fourth skilled, about one-half semi-skilled, and about one-fourth unskilled workers. Koepke's⁶ study of manufacturing plants in Minnesota classified the workers as follows: 10 percent, skilled mechanics; 79 percent, semi-skilled operators; and 11 percent, unskilled workers.

³ National Industrial Conference Board. *Machinery, Employment, and Purchasing Power*. New York: the Board, 1935. p. 78.

⁴ National Resources Committee. *Problems of a Changing Population*. Washington, D. C.: Government Printing Office, 1938. p. 213.

⁵ Jerome, Harry. *Mechanization in Industry*. New York: National Bureau of Economic Research, 1934. p. 296.

⁶ Koepke, Charles A. *A Job Analysis of Manufacturing Plants in Minnesota*. Employment Stabilization Research Institute Bulletins, Vol. II, No. 8, June 1934. p. 26.

Many Industrial Jobs Now Require Little Formal Vocational Training.

Large masses of workers today need adaptability rather than skill. Only a small fraction of industrial jobs at present require extensive vocational training of a formal type. Many industrial workers are trained on the job under the supervision of foremen. This situation emphasizes the importance of careful study as a basis for decisions as to what types of occupational training should be offered by the schools. Training should not be provided for jobs that do not require it or for occupations where workers can best receive on the job such training as is required.

The easily observed fact that many industrial jobs do not require extensive, formal, or highly technical training, however, is less important than certain other considerations. Current demands of vocations should not determine long-range public policy in training workers. Such a criterion would tend to keep all labor on an unskilled, low-paid basis.

In the Orient today much of the drinking water is carried from unsanitary sources, in goat-skin bags, on men's backs. Such training as this work calls for can be learned on the job in one day. At first glance, therefore, one might conclude that there is no reason to give these human beasts of burden either general or occupational education. Such unsound conclusions are what keep some parts of the world from developing modern water systems, as well as many other features of an advanced economy.

The people of the United States have acted on a different hypothesis. They have had the insight to use scientific research, invention, and technology in developing modern water supply systems. Physicians, public health workers, and teachers have combined in educating the public as to the importance of pure water. As a consequence of these

and other factors, an abundant supply has been made available at a minimum cost.

Transition from primitive to modern methods in supplying water and many other essentials would have been impossible, if public policy in training workers had been dictated solely by immediate demands in skill of jobs as they have existed at a given time. This is not to say that knowledge of training requirements of all occupations should not enter into the development of programs of occupational education, nor that a too rapid expansion of vocational training facilities all along the line would be desirable. It does mean that insight and intelligence as to the factors which constitute the very basis of industrial economy must be used in determining a nation's policy in the training of its population. This matter will be further dealt with in the next chapter.

Relation of Mechanization to Skill Required in Manufacturing Needs Further Study.

More important than the present degree of skill required in manufacturing is the probable future trend in this regard. Kimball's investigation shows that among manual, as distinguished from white-collar and proprietary workers, skilled workers have increased the fastest, semi-skilled the next, and the unskilled the slowest.⁷ Norton's findings lead him to the conclusion that within the field of manufacturing there is some evidence suggesting a possible increase in the future in the relative significance of skilled workers.⁸ He also points out, however, that many semi-skilled and unskilled workers in manufacturing do not require any prolonged period of training. The general conclusion of the investigation of the National Bureau of Economic

⁷ Kimball, Bradford F. *Op. cit.*, p. 173.

⁸ Norton, T. L. *Public Education and Economic Trends*. Cambridge, Mass.: Graduate School of Education, Harvard University, 1939. p. 136.

Research, as to the relation of mechanization of industry to the skill required of workmen, is particularly significant:

“As to the effect on skill of further mechanization in the future, with our industries in their present state of mechanization there is considerable reason to believe that the effect of further changes will be to raise the average skill required. The construction, installation, repair, maintenance, and adjustment of machines (including automobiles) is requiring an ever-increasing army of relatively skilled men; the number of skilled men still engaged in hand processes, aside from the building operations, is relatively small; a further displacement of unskilled workers by mechanical handling may be expected; and so large a proportion of other workers in industry are now semi-skilled that the principal effect of further mechanization of the processing operations will be to decrease the demand for semi-skilled workers. The effects will, of course, be diverse, some changes lowering the skill requirements, others raising them. On the whole, the shift will continue to be from emphasis on the trade skill typical of the handicraftsman to, on the one hand, the alertness and intelligence required in handling fast and intricate machinery and, on the other, to the more formal training required in the engineering and production planning departments. In the machine repair men we shall continue to have an approximation of the type of training and skill required of the old-style all-round mechanic.”⁹

The factor of mechanization in manufacturing industry is too much in flux and the incompleteness of investigations in this field should warn against easy generalization as to amount of skill required of workers. It is important to remember, however, that manufacturing involves a minority and a declining percentage of all workers. The evidence to date does not indicate that less skill is required with increasing mechanization. The evidence now available seems to suggest the opposite, although it is insufficient to be conclusive.

⁹ Jerome, Harry. *Op. cit.*, p. 402-03.

*There Appears To Be a Shortage of
Certain Types of Skilled Workers.*

It is important that an adequate supply of skilled workers for manufacturing and mechanized industry be maintained. Certain factors are making this difficult. The amount of immigration, bringing with it a considerable supply of workers trained under European apprenticeship systems, has been greatly reduced in recent decades. Young, skilled immigrants who arrived during the period of large immigration are reaching the age of retirement. Also our population as a whole is increasingly found in the older age groups. Apprenticeship as a method of training has never become so well established in the United States as in most industrial nations. Such provisions as this country made for this type of training were sharply reduced during the depression. Taking account of factors such as these the Advisory Committee on Education concluded that:

“ . . . there are few problems to which industrial and labor leaders should give attention that are more pressing than a renewed effort to secure the training of a larger number of young people for the skilled occupations. In particular, a revival of intensive apprentice training on a limited scale throughout the Nation constitutes a major need—one that is related to the foundations of national prosperity, and one in which not only industry and labor but also the Federal Government must take an interest and exert leadership. The number of youth drawn into intensive apprentice training should never be large in proportion to the total youth population, but continuous provision for the training of an adequate number of apprentices is essential to the maintenance of industrial productivity.”¹⁰

Even during the depression, it appears that there was a shortage of skilled labor in certain industries. The National Industrial Conference Board consulted 287 metal-manu-

¹⁰ Advisory Committee on Education. *Report of the Committee*. Washington, D. C.: Government Printing Office, 1938. p. 113.

facturing companies and discovered a shortage under depression conditions of 1 percent in skilled craftsmen and a 7 percent shortage assuming operation at normal capacity. This report, made in 1935, concluded: "If these proportions may be regarded as representative, they indicate a total present shortage in metal-working industries of 19,034 skilled workers, and a shortage, if operating at normal capacity, of 123,357."¹¹

A study of engineering education reports that:

"With the rapid shift toward higher standardization and automatic processes, the total labor requirements in American industry tend to diminish, but there is a striking rise in the proportion of staff experts and of highly trained technicians and supervisors. Industry must therefore look increasingly to technical schools rather than to its rank and file for its technical and supervisory personnel.

"The situation in industry warrants a great expansion of technical education above the present level of the secondary schools. There should be a greater diversity of technical education to serve a wider variety of individual and industrial needs. . . . Enrollments in day technical schools, both full-time and part-time can be greatly increased. The urge toward technical pursuits normally asserts itself between the ages of 16 and 19. Technical education needs to be made widely available locally, a technical institute might thrive in most cities of 50,000 or more."¹²

It appears extremely important that comprehensive and recent figures should always be available as to supply and demand of workers with different types of training in all occupations. Such data are prerequisite to the planning of a program of vocational education and guidance.

¹¹ National Industrial Conference Board. *Wanted: Skilled Labor*. New York: the Board, 1935. p. 36.

¹² Scott, Charles F. *Summary of Results, the Investigation of Engineering Education and Related Activities, 1922-33*. Society for the Promotion of Engineering Education, 1934. p. 27-28.

The Proportion of All Workers Possessing Skill and Technical Knowledge Is Increasing.

The trend as to the demand for skilled and technically and professionally trained as opposed to unskilled labor is diverse. It varies with different occupations. Extensive studies, however, generally agree that when the occupational field as a whole is considered there is a declining demand for common labor of the strictly brawn type and a growing demand for workers, classified all the way from semi-skilled to highly trained technicians, professional workers, and executives. This fact is established by a number of investigations, using various approaches and types of data. No extensive study of occupational trends arrives at an opposite conclusion. Illustrative researches are cited in subsequent paragraphs.

One investigation of present difficulties and needs common to all workers, as revealed by a study of the trends common to all occupations, reports that:

1. It is more difficult for the worker to keep up with what he has to know regarding his work.
2. It is more difficult for him to keep up with what he has to do in his work.
3. It is becoming more necessary for him to use his head more and hands less.
4. It is becoming more necessary that he shall also have other assets in addition to specific knowledge and skill.
5. It is more necessary for him to keep in good physical condition.
6. It is more difficult to learn skilled occupations on the job.¹³

This investigation reports that in addition to the above obstacles which confront workers in all fields, the person who is employed as a wage-earner in commerce or industry faces "a continuous situation where the demand for technicians in all fields is increasing and where the demand for highly skilled tradesmen continues undiminished."

¹³ "Vocational Education and Changing Conditions." *Vocational Education Bulletin*, No. 174, General Series No. 5. Washington, D. C.: Government Printing Office, 1934. p. 3.

Studies of United States Census data, such as that of Science Research Associates, reveal that:

" . . . there has been a gradual rise in labor's occupational status during the period 1920-1930. By 1930 the proportion of unskilled workers had decreased, while the proportions of professional, managerial, and clerical workers had increased; and among men the proportion of skilled and semi-skilled workers also increased during this period. . . .

"Unless this trend has been reversed since 1930, which other investigations indicate to be unlikely, it appears that as industry progresses, it will require a larger and larger proportion of its workers to have a certain amount of training."¹⁴

A study by Edwards,¹⁵ dealing with trends as to the distribution of workers by social economic classes, found that the most rapid percentage increases occurred among semi-skilled, clerical, and professional workers, while percentage decreases occurred among farm owners and tenants and unskilled workers. Bingham's¹⁶ analysis of occupations, according to amount of education, found that between 1920 and 1930 the number of persons engaged in professional and other work requiring special ability or advanced training increased slightly more rapidly than total population; while the number in occupations, involving little or no training, increased less rapidly than total population. Norton's investigation, suggested by the Regents' Inquiry, concludes "that for all types of industries combined, unskilled workers are decreasing in importance; . . . that technically trained workers have become more prevalent; and that many of the white-

¹⁴ Spencer, Lyle M. "Some Effects of Technological Changes on Jobs." *Occupations* 17:611-612; April 1939.

¹⁵ Edwards, Alba M. "A Social-Economic Grouping of the Gainful Workers of the United States." *Journal of the American Statistical Association* 28:377-387; December 1933.

¹⁶ Bingham, Walter V. "Abilities and Opportunities." *Occupations* 12:6-17; February 1934.

collar occupations in the distributive and service groups call for personal characteristics rather than merely skill accomplishments.”¹⁷

An extensive study shows that improved pressroom technics in printing plants, “instead of displacing skill, stimulates an increasing demand for skill and displaces unskilled labor.”¹⁸

Data obtained for this report from 99 employers in Pittsburgh, including such varied types of occupation as banking, printing, insurance, many forms of merchandising and manufacturing, steel plants, and public utilities, show that 91 out of the 99 organizations studied employ only youths who are over eighteen years of age and are high-school graduates. College training, to an increasing degree, is a prerequisite to employment. For example, the Placement Office of the Carnegie Institute of Technology reports that it has a strong demand for college graduates in such positions as major accounting, advertising, engineering, industrial relations, legal and patent work, treasurer’s offices, service and works management, policy making, major supervision, and design.

A study of the National Resources Committee, which aimed to take account of all pertinent data, concludes that:

“Viewing the occupational field as a whole, one may expect in the future somewhat less opportunity for unskilled, the strictly ‘brawn workers,’ and increased opportunity for those who tend machines, while the opportunity for skilled workers and foremen may not alter substantially. Occupational opportunity for clerical and professional workers will perhaps for some time continue to show the largest gain.”¹⁹

¹⁷ Norton, T. L. *Op. cit.*, p. 136.

¹⁸ Baker, Elizabeth Faulkner. *Displacement of Men By Machines*. New York: Columbia University Press, 1933. p. 182.

¹⁹ National Resources Committee. *The Problems of a Changing Population*. *Op. cit.*, p. 214.

A general conclusion from a report of the American Youth Commission somewhat more specifically lists the probable future trends as to skill and knowledge required in various types of occupations:

“Viewing the occupational field as a whole, on the basis of past trends one may expect employment opportunity to be distributed somewhat as follows: unskilled workers will find it less easy to find employment, the demand for the semi-skilled will increase somewhat, the opportunity for skilled workers and foremen will remain about the same, there will be a substantial increase in occupational opportunity for clerical and professional workers, and a marked decrease in opportunity for farm owners and tenants, accompanied by a slight increase of opportunity for all other types of proprietors, managers, and officials.”²⁰

*Occupational Education Should Take
Account of Important Social Trends.*

The material presented in preceding pages shows that occupational life continually requires increases both in the amount and quality of education possessed by those who would succeed in their chosen vocations. The range and diversity of occupations for which training is needed are already enormous and may be expected to increase further. The Social Security Board takes account of 25,000 different types of work in its records. The schools can offer specific training for only a small fraction of this number. This means that answers must be found to questions such as these: What types of prevocational training, providing the best background for a wide range of occupations, should be offered in school? What bases shall the schools use in selecting the more or less limited number of vocations in which they offer training? For what phases of vocational education should industry, labor, and other agencies be responsible? What types of cooperative rela-

²⁰ Edwards, Newton. *Equal Educational Opportunity for Youth*. Washington, D. C.: American Council on Education, 1939. p. 143-144.

tionships between the schools and other training agencies work out most satisfactorily for all concerned?

Another economic change that is of large significance to education is "the kaleidoscopic shifting of occupational patterns." A report of the National Resources Committee states that:

"We have been developing a rapidly shifting occupational pattern. Perhaps the most characteristic feature of contemporary occupational life is the instability of employment opportunity. Within the span of a few years century-old occupations and trades are reduced to minor importance or disappear altogether and new ones take their places. The wheelwright, the glass blower, and the book-keeper give place to the automobile mechanic, the factory operative, and the statistical clerk. Both the range and the quality of occupational opportunity are subject to sudden shifts due to such factors as advances in technology, changes in the consumption habits of the people, expansion or contraction of purchasing power, or fluctuations in prices and wages." ²¹

There are some more or less clearly defined trends in the distribution of gainful workers in the United States. A smaller and smaller proportion is engaged in extracting and transforming materials into finished goods, and a steadily growing proportion is concerned with transporting and distributing these goods and in providing personal, professional, and public service.²² By 1930 the proportion of workers engaged in the production of goods had dropped to approximately half those gainfully employed. The proportion engaged in distribution and service activities in 1930 was twice as large as in 1870.

Between 1920 and 1930 the total number of gainful

²¹ National Resources Committee. *The Problems of a Changing Population*. *Op. cit.*, p. 213.

²² Stewart, Paul W.; Dewhurst, J. Frederic; and Field, Louise. *Does Distribution Cost Too Much?* New York: Twentieth Century Fund, 1939. p. 11.

workers in domestic and personal service increased 47 per cent. This represented a gain of 1,572,000. Among the types of personal service where the numbers employed increased more than 66 percent during the decade 1920-1930, were barbers, hairdressers, and manicurists; cleaning, dyeing, and pressing shop workers; elevator tenders; laundry owners and managers; laundry operatives; restaurant, cafe, and lunchroom keepers; and waiters.

The increasing proportion of workers in distributive and service occupations appears to call for the establishment of more training courses in these fields.²³

The percentage of gainfully employed workers in agriculture continues to decline. In 1910 it was 32.5; in 1920, 25.6; and in 1930, 21.4. Agriculture had more than a million fewer workers in 1930 than in 1910. While fewer people need to be trained in agriculture, the training called for is more extensive. Today vocational education in agriculture includes systematic instruction not only in production with its increasing use of machines and mechanical power, but also in such complex fields as marketing, co-operative effort, farm business procedure, finance, and rural civic and social activities.

While schools should keep in touch with such changes as those cited in the foregoing paragraphs, they must center on fairly enduring foundations, and these should be frequently checked to make sure that courses offered provide general training basic to large numbers of current occupations. In many instances this calls for the further training of teachers in service and the retraining of others.

²³ As an illustration of how one state is investigating its occupational trends with a view to determining the types of vocational training which should be offered see: *Occupational Trends in California with Implications for Vocational Education*. California State Department of Education Bulletins 1937: Nos. 10-12; 1938: Nos. 4, and 9; and 1939: No. 7. The last four of these bulletins prepared by Emily G. Palmer, deal with trends in the construction industry, in distributive occupations, in service occupations, and in manufacture, respectively.

Another factor is the increasingly late induction of youth into industry. This offers an opportunity when youths continue in school. When they do not, it creates one of our most distressing problems. Delayed entrance into vocational life means that the gainfully employed are mainly an adult group. There is little disagreement that occupational needs growing out of social and economic trends such as the foregoing must be met by some agency. More specific questions, however, are: (1) What part shall schools and colleges play in providing adequate occupational education? and (2) How may these institutions best discharge the share of this task which wise public policy suggests that they assume? These questions will be dealt with in subsequent sections of this chapter.

*Schools and Colleges Have Large Responsibilities
for Occupational Education.*

Occupational education, properly conceived, is a community responsibility. It must be considered in its local, regional, and national aspects. Its importance to the nation's well-being calls for cooperation of agriculture, labor, industry, government, education, and science. Here, however, we are concerned primarily with the role which education, independently and in cooperation with other agencies, should play.

The responsibility of schools and colleges for occupational education should be an important one. This conclusion is based upon several considerations. First, the public expects the schools and colleges of the country to accept a large share of the task. Provisions already made for this type of education testify to this expectation. One of the public opinion polls recently reported by *Fortune* asked this question: "There is an admitted shortage of many kinds of skilled labor in the United States. Which of these do you think should take the lead in training a new sup-

ply?" Public opinion divided thus among the various choices offered:

The public school system	41.9%
Private industry	26.8
The labor unions	8.9
WPA	6.8
Other	1.9
Don't know	13.7

While this poll cannot be taken as expert opinion, it does represent the judgment of the general public. Commenting on the figures, *Fortune* states: "Public schools have already made an impressive start in vocational training, now covering as many as 175 fields. Here, apparently, is a strong public demand that schools extend those facilities and assume a still greater share of the job. . . . The opinion that the school system should take the lead in training a new supply of skilled labor is practically universal in the United States."²⁴

The Commission believes that this attitude of the public, concerning the role of schools and colleges in occupational education, is sound.²⁵ Without wishing to depreciate the responsibilities of other agencies, and fully recognizing the necessity of cooperation with them at many points, it is nevertheless true that this is largely a job for educational institutions. This does not mean that the schools can give extensive and specific training for thousands of occupations. Their problem is one of discovering basic skills and understandings pertinent to groups of occupations and the selection of certain vocations for which more definite training is desirable. Also, more is involved than training in occupational skills or even communicating technical knowledge. The development of social intelligence, the collection and

²⁴ "The Fortune Survey: XX." *Fortune* 19:107; April 1939.

²⁵ See the following publication for a statement by the National Occupational Conference concerning the public school's responsibility for occupational training: *Occupational Adjustment, Interim Report*. New York: National Occupational Conference, 1938.

unbiased interpretation of information as to occupational trends and demands, the appraisal of individual capacities, the judicious advising of youths as to how to prepare for, obtain, and keep a job, are all involved. These and other functions are likely to be developed and coordinated with maximum benefit to individuals and to the general well-being under agencies responsible to society as a whole, and which look upon education as a primary, rather than an incidental, concern. The *Fortune* survey cited above concluded that the public attitude on this matter was based on belief that the "schools have the continuity and the economic detachment to do the job."

The successful fulfillment of this assignment requires consideration of (1) general principles which should guide in the development of the program, and (2) types of schools involved at various levels of occupational education and functions which must be performed.

Certain Principles Should Guide in Developing Occupational Education.

Education for occupational efficiency should be conceived in broad, rather than narrow, terms. Vocational and general education are so closely related that they are phases of a unified process.²⁶ The long look should always prevail. The clash of economic interests, sometimes narrowly conceived, can be adjudicated most justly and courageously, when the purposes of education in this area have been intelligently and broadly formulated.

The best results are likely to be obtained when schools and colleges develop cooperative relationships with other

²⁶ National Education Association and American Association of School Administrators, Educational Policies Commission. *The Purposes of Education in American Democracy*. Washington, D. C.: the Commission, 1938. p. 97-98; and National Education Association and American Association of School Administrators, Educational Policies Commission. *The Structure and Administration of Education in American Democracy*. Washington, D. C.: the Commission, 1938. p. 18-20.

agencies, properly concerned with occupational education. Cooperation with industry in providing adequate training and retraining is essential.²⁷ It is also important that the legitimate interest of labor in this area should find expression.²⁸ Labor has reason for condemning evils which have existed in the vocational education programs of some communities. The basic guide of education in dealing with all cooperating agencies should be individual and social welfare conceived in the broadest terms.

Occupational education can be built only on a foundation of accurate, comprehensive, and continuing information. The scope and complexity of vocational life makes this essential. It is the responsibility of education, in cooperation with other agencies wherever feasible, to assemble facts as to the requirements of all types of vocations, as to occupational trends and shifts, as to wage scales, conditions surrounding work, means of securing employment, facilities available for occupational retraining or upgrading, and similar types of information. This requires occupational research affecting national, regional, and state conditions and trends. It demands that each community maintain continuous surveys of local occupations and their requirements as a basis for a program which takes account of unique and peculiar needs.

Before entering vocational life youths should have a keen appreciation of the significance of this information. They should understand its role in guiding their vocational careers both before and after leaving school. The offerings of the school in this area should be based on this information. The advice given the individual should take account

²⁷ See the following report for the viewpoint of one industrial organization: National Industrial Conference Board. *Training for Industry*. New York: the Board, 1937. 29 p.

²⁸ See pages 241-285 of the following report for a statement of labor's experience with trade and industrial education: Russell, John Dale, and Associates. *Vocational Education*. Staff Study Number 8, Prepared for the Advisory Committee on Education. Washington, D. C.: Government Printing Office, 1938.

of it as well as of data concerning his capacity, ability, and vocational objectives. With such information, the school is in a position to render youths genuine help in choosing occupations, in preparing for them, in obtaining employment, and in supplementing their initial preparation. The Commission's report, *Social Services and the Schools*, deals with placement at greater length and sets forth some desirable guiding policies.²⁹

It is obvious that guidance services of a high caliber are required. Only persons with broad background and balanced discrimination can interpret the foregoing types of information in a manner which will contribute most to individual occupational success and general economic well-being. The aim should be to equip students with factual information intelligently interpreted, which will permit them to make wise decisions as to their possible success in various types of vocations.

Functions of Occupational Education at Various School Levels Need Clarification.

The maximizing of the economic effects of education requires that functions contributing to occupational efficiency at various school levels be clearly defined. This question has been the subject of careful study and recommendation on the part of a number of authoritative commissions in recent years.³⁰

²⁹ National Education Association and American Association of School Administrators, Educational Policies Commission. *Social Services and the Schools*. Washington, D. C.: the Commission, 1939. p. 98 ff.

³⁰ Russell, John Dale, and Associates. *Op. cit.*, p. 205-214.

Spaulding, Francis T. *High School and Life*. New York: McGraw-Hill Book Co., 1939. p. 269-273.

Norton, T. L. *Education for Work*. New York: McGraw-Hill Book Co., 1938. 263 p.

Briggs, Thomas H., Chairman, Committee on the Orientation of Secondary Education. *Issues of Secondary Education*. Bulletin of Department of Secondary School Principals, National Education Association, January 1936. p. 185-211.

Beginning with the elementary school, and particularly in the early years of secondary education, the foundations of economic understanding and preliminary vocational orientation should be laid. This function is integrally related to general education. It should be clearly recognized in the curriculum and work of the school. All children should know the meaning of work, should come to have respect for all types of honest labor, should learn in school—and if possible, to some extent out of school—what it feels like to do real work, and should at adolescence begin tentatively to identify themselves with some general area of future occupational life.

Commissions which have considered vocational training in recent years agree that secondary education has definite responsibilities in this area. The secondary school should take account of the fact that most students, except those planning to enter higher educational institutions, need to get and hold jobs immediately upon leaving school. Accordingly, these students should be provided with the information and training necessary for initial entrance into an occupation. The character and amount of such training will be conditioned by requirements of occupation involved and age at beginning work. Training can be neither extensive nor specialized for those who leave school at sixteen or seventeen years of age. Opportunities open to these youths and lack of vocational background preclude such training, except in certain types of commercial and agricultural work. Unspecialized vocational training should aim at giving some acquaintance with, and preliminary training in, skills and requirements common to one or more of the larger categories of semi-skilled work. Leaders in vocational education also emphasize the importance of developing habits of thinking and of doing which enable one to make good on the job.

For those who find it necessary to enter relatively un-

skilled vocations at sixteen or seventeen, facilities should be provided for additional training either on a part-time or full-time basis. Such training should be provided by the school, industry, or other agencies. In any instance, the school should provide guidance, and when desirable, specific training for these young workers. Every effort should be made to create a situation which protects them from exploitation and which offers maximum opportunity to develop vocational talent and ambition.

For those who enter occupational life from eighteen to twenty years of age, more extensive and specific training should be provided. Preparation for semi-technical and semi-professional occupations, involving employment in such callings as laboratory and dental assistants, responsible secretarial work, and architectural assistants, is involved here. There should be genuine terminal courses, involving basic theoretical—and in certain instances practical—training for youths who desire preparation for successful work in a variety of vocational areas, such as agriculture, trade, and industry. In some instances, it has been recommended that semi-technical training at this level should be provided in separate technical institutes. The development of upper secondary schools, enrolling students from sixteen to twenty years of age, of the type proposed in the Commission's report on the structure and administration of education³¹ should permit satisfactory provision of the foregoing types of occupational education.

In rural communities, in addition to vocational courses offered in secondary schools, regional junior colleges and technical schools might well offer training for certain technical and semi-professional occupations. While demands of farm life and local industries will naturally be recognized,

³¹ National Education Association and American Association of School Administrators, Educational Policies Commission. *The Structure and Administration of Education in American Democracy*. Washington, D. C.: the Commission, 1938. p. 13 ff.

these should not be the exclusive consideration in setting up vocational courses, for such limitation would tend to check occupational mobility.

Certain Criteria Should Guide in Selecting Occupations for Which Training Is Offered.

All communities cannot provide training for each of thousands of occupations. What criteria may be suggested in choosing particular vocations for which training will be offered in a particular school? It should be said at once that decisions on this question must rest on a variety of considerations rather than on some one inflexible rule.

Training that has general applicability to success in several or a major group of occupations should be given preference. The desirability of offering training for an occupation grows as the amount of intellectual and technical content involved increases. Special personal characteristics, subject to training, should also be considered. Training requiring no more than the simplest of manual skills, involved in only one job and quickly learned in the shop, should be avoided.

The completion of the occupational training offered should promise the learner reasonably prompt returns in the form of employment. Specific training should not be provided young workers in occupations, admission to which requires maturity and vocational experience. Occupations in which there are many, rather than few, openings in the community involved should be given preference.

The school should not offer training which can be and is provided with superior effectiveness by industry or other agencies. Certain phases of vocational education can be done better through the cooperation of schools and industry.

Schools should give precedence to occupations which justify the training of sufficient numbers so that grouping

and specialization is practical on an economical basis. The satisfactory application of this criterion will involve the reorganization of many small school systems into larger administrative units, or other adjustments.

Expanding, rather than receding, occupations should be given the greatest emphasis. For example, aeronautics would in most cases take preference over wagon-making.

No one of the foregoing criteria is decisive. All, and doubtless others, should be considered in selecting the particular occupations for which the school provides training.

Facilities Should Be Provided for Preventing Occupational Obsolescence.

Considerations which justify occupational education in the first instance, require that it be kept up to date. If it is wise to train a person at twenty, it is wise to retrain him at forty, if conditions make this necessary. Instability and rapidity of change in modern occupational life and the increasing average age of the population make this need ever more urgent. Otherwise, vocational skills become obsolete, earning power is reduced, or unemployment results. Both individual and general economic losses follow. In retraining workers, the schools and industry should share the responsibility. Retraining which involves specific skills can in many cases best be acquired on the job, especially when large outlays for the latest mechanical equipment are involved.

Closely related to the need for retraining is that for the upgrading of preparation within a calling. Training adequate for a particular calling ten or even five years ago is insufficient today. Provision must also be made for the rehabilitation of workers who must change work due to accidents, partial health disability, age, or similar causes. Experience has demonstrated that many workers can thus be prevented from being economic liabilities.

Losses due to obsolescence are not limited to relatively simple skills and techniques. Information must be kept current as to changing vocational requirements and trends and as to new areas of occupational opportunity. Technical competency and general economic intelligence must continually be renewed. A wise business man will keep his machinery and equipment up to date. He considers expenditures for this purpose a wise investment. He knows that his net income will be greater if he spends part of his profits to guard against plant depreciation. The same principle applies in preventing depreciation of skills and knowledge of employees.

The trend of vocational education "has been steadily in the direction of rendering more and more service to adults, and attention is becoming less and less exclusively focused upon the adolescent."³² In 1936, of the 1,381,000 enrolled in vocational schools operated under state plans, 391,000, or 28 percent, were farmers, trade and industrial workers, and homemakers attending evening classes in subjects related to their daily employment; 334,000, or 24 percent, were youths employed in these three fields and attending part-time classes; and 658,000, or 48 percent, were boys and girls attending full-time vocational schools.³³ These figures emphasize the importance of extension training through part-time and evening classes for employed workers.

*Higher Institutions Make Indispensable
Contributions to Occupational Education.*

Higher education has long been concerned with preparation of students for professional work. In its earliest beginnings, it was primarily concerned with this function. To-

³² Lee, Edwin A., Editor. *Objectives and Problems of Vocational Education*. New York: McGraw-Hill Book Co., 1938. p. 30.

³³ United States Department of the Interior. *Annual Report of the Secretary of the Interior*. Washington, D. C.: Government Printing Office, 1937. p. 293.

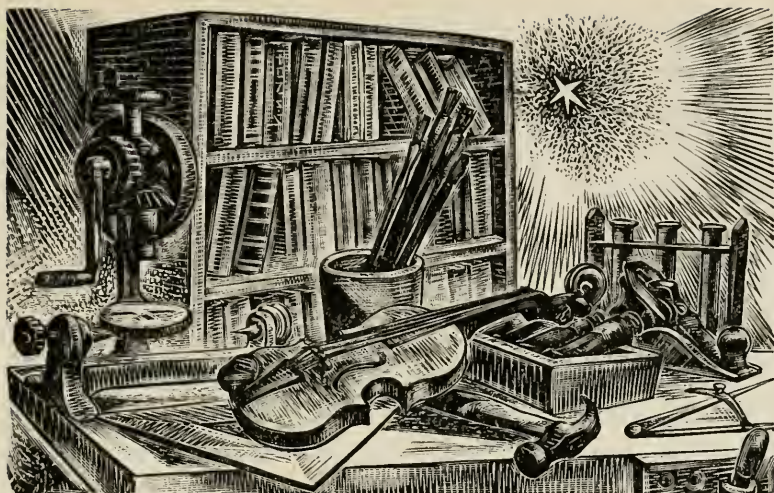
day, the preparation of professional personnel in medicine, law, engineering, ministry, teaching, and other professions is almost wholly performed by institutions of higher education. The economic significance of this work in our economy can scarcely be over-estimated. It keeps filled the reservoirs of professional and technical competence, which is the *sine qua non* for maintaining and advancing civilized life in occupational as well as in other areas.

The significant contributions made by higher education in training for economic and vocational leadership, however, should not obscure the need for improvements aimed at positive economic effects. The Commission's report on *The Purposes of Education in American Democracy* states that "it is no longer profitable, if indeed it ever was so, to debate the relative importance of vocational and non-vocational education. The two are not properly considered as competitive; they are phases of a single process. An educational program which, taken as a whole, neglects either aspect, is incomplete, if not actually harmful."³⁴ The Commission believes that this principle applies to higher as well as to secondary education. Higher education today presents examples of programs which fall short of maximum contribution to both general and occupational education. In some instances, this is due to a curriculum too far separated from real life. This condition reflects the pedantic assumption that liberal education must be divorced as far as possible from the workaday world and the practical affairs of mankind. In other instances, it is due to too much emphasis in the preparation of professional workers on the minutiae of their calling, while the social and economic orientation essential to intelligent service in a profession is largely neglected.

³⁴ National Education Association and American Association of School Administrators, Educational Policies Commission. *The Purposes of Education in American Democracy*. Washington, D. C.: the Commission, 1938. p. 97.

Large economic effects might be expected to follow more careful analyses of the requirements expected of the growing number of persons entering the professions. These analyses should not be solely concerned with the strictly technical aspects of their callings. The peculiar responsibilities which rest upon all professional persons for intelligent, social, and economic leadership should not be neglected. It matters not whether this be called general education, education for citizenship, or professional education. The important consideration is that this element in the education of students at the higher levels is essential to economic well-being as well as to other aspects of life. It is inadequately provided in the training of professional workers today. One of the most serious threats to the maintenance of a democratic, industrial civilization is the social illiteracy often exhibited by professional workers. Higher education makes a similar mistake when it assumes that the general education of young men and women of twenty and even of twenty-one and twenty-two years of age is best accomplished without taking some account of the economic problems of society and of the vocations which most of them will be entering shortly. The value of higher education, as it affects general culture, economic, and occupational well-being can be substantially increased.

The emphasis of this and the preceding chapters on improving the economic contribution of education should not obscure the fact that the very existence of our enormously productive industrial economy would be impossible if the population of the United States were illiterate, ignorant, and occupationally unskilled. Universal public education parallels the development of the democratic, industrial state and makes indispensable contributions to its maintenance and progress.



V.

AMOUNT OF EDUCATION FOR ECONOMIC WELL-BEING

For the community as a whole, the investment of capital in educational opportunities tending to add to the industrial capacity of boys and girls is a certain means of adding to the collective wealth. Capital so used . . . yields a princely return and will continue to do so until the present inequities disappear.

—H. R. SEAGER.

From the economic viewpoint it is wise public policy to offer the kind and amount of education which will result in the largest total income after paying the cost of the education to individuals and to the nation. The kinds of education likely to bring this about have been dealt with in the two preceding chapters. This chapter considers the amount of education needed to achieve maximum income.

Economic theory proposes that enough education should be provided so that persons can work in the manner and in the occupations where the aggregate of their incomes will total the largest amount over and above the cost of educa-

tion involved. If any less education is provided, the income of society will be correspondingly reduced. The objective should be a situation where there will be more left to buy other things after adequate education is paid for, than there would be if such education were not provided.

*Sufficient Education Must Be Provided
To Achieve Occupational Efficiency.*

One of the conditions for realizing maximum total income is that sufficient education be provided each person so that he may work in the most effective manner. He must be given the maximum vocational intelligence and skill which his capacity and diligence permit and which the cost of the education justifies. If he acquires this amount of education he will be able to produce the largest quantity of desirable goods and services.

Education of the right type continually aids persons to achieve greater occupational efficiency. It converts a farmer, who is ignorant of the kind of crops to plant, of the way to tend them so as to achieve maximum yield, and how to protect and increase the fertility of his soil, into a farmer who is informed on all these matters and produces accordingly. It takes a youth as ignorant of how to combat disease as a witch-doctor and gives him the full power of medical science. A youth who would be able to travel only as far in a day as he could walk, given technical skill, can pilot an airplane three thousand miles in the same time.

When this process is multiplied through the expansion of educational opportunity, many persons acquire the ability to work in a more efficient manner. The results will vary both in their effects on total and individual income. Total production will be increased as a result of the larger amounts of desirable goods and services produced by the growing numbers of efficient workers.

More than a century of experience has validated this hypothesis. The progress of the industrial revolution constitutes one validation. Increasing amounts of education for economic intelligence and occupational skill have been one of the ingredients of an economic system unrivaled in gross or per capita productivity.

This hypothesis is also supported by the present economic status of the nations of the world. All countries which now enjoy an advanced stage of economic development have made extensive provision for education. A similar relationship between economic progress and education is found within the United States. The states least advanced educationally are those which are falling short of capitalizing their human and natural resources.

*Sufficient Education Must Be Provided
To Permit Occupational Mobility.*

To fulfill a second condition for realizing maximum total income, it is necessary that sufficient education be provided to equip people to enter or to transfer to callings, the products of which are in demand. This will permit workers, threatened with low wages or unemployment because of insufficient demand for the product of their labor, to prepare for occupations where they may earn larger incomes. The result again will be to raise the average of individual incomes and the total national income.

Education plays a crucial role when it aids young workers to avoid overcrowded and consequently low-paid callings. This condition particularly applies to the lower ranks of unskilled labor. To the extent that education can aid in thinning out the overcrowded ranks of unskilled and poorly paid workers, it tends to increase national income. The same applies to any calling for which there are many more workers than economic demand requires. In such a situation some workers are unemployed, others due to severe com-

petition for jobs must accept low wages, and total economic well-being tends to be reduced.

To the extent that education contributes to the free flow of labor into occupations where wages are higher, whether initial entry into vocational life or transfers from occupation to occupation is involved, the total national income should tend to rise even though the wages of individual workers tend to be equalized as more and more workers qualify for positions demanding advanced training. The testimony of economists concerning the validity of this thesis can be marshaled in an impressive array, among which the following quotations are illustrative:

"A system of free and universal education, especially if it is directed toward practical ends by educational statesmen who understand the principle of occupational balance, will greatly increase the mobility of labor. It will give every young person a wider choice of occupations. It will enable them, in considerable numbers at least, to qualify for the occupations that are well paid and to avoid those that are poorly paid."¹

"The removal of the barriers of educational privilege . . . will greatly increase the supplies of qualified workers at the higher levels, and will thus narrow the difference between the incomes which these groups are now able to demand, thanks to their partial monopoly, and those enjoyed by the rank and file of industry."²

"To the degree that education breaks down the barriers between labor groups, it will tend to lower the higher wage income and raise the lower, at the same time increasing the average. . . ."³

"A good system of public education continually increases the amount of freedom in the choice of occupations. Edu-

¹ Carver, Thomas Nixon, and Lester, Hugh W. *This Economic World and How It May Be Improved*. Chicago: A. W. Shaw Co., 1928. p. 53.

² Wootton, Barbara. *Plan or No Plan*. New York: Farrar and Rinehart, Inc., 1935. p. 285-286.

³ Fairchild, Fred Rogers; Furniss, Edgar Stevenson; and Buck, Norman Sidney. *Elementary Economics*. Vol. I, Third Edition. New York: Macmillan Co., 1936. p. 489.

cation gives greater knowledge regarding the advantages and requirements of different occupations; at the same time it puts its possessor in a position where he can more readily realize the advantages and meet the requirements. It therefore tends to lessen the competition for the lowest grades of employment, thus raising the wages there; while it tends to lower the wages in the higher grades by making competition for such employment more keen.

"It is of course easy to exaggerate the influence of more 'schooling' in preparing individuals for the various tasks of life. But, after all, it is doubtful whether any other one agency of civilization has a greater influence than does the school in fitting the young of all classes for the industrial struggle that lies before them. This being so, it seems likely that society will move rapidly and far, along this line, in attempting to lessen such inequalities of economic situation among classes as are not proved to be due to differences of inherited natural capacity. What results might not be achieved today if society were to provide for compulsory, free, subsidized education of body and mind of all its sons and daughters up to the eighteenth year of their lives, such education being limited only by the ability of instructors and students to realize its possibilities."⁴

"Wide and free diffusion of all sorts of vocational training would almost certainly increase the productive power of the community as a whole; but it would also tend to lessen the differences in earnings which now exist and to lower the earnings of some individuals and some classes now favored."⁵

Education Must Be "Effectively Free."

If the second condition for realizing maximum total income is to be met, occupational mobility must be guaranteed. This requires that education be made "effectively free." Schooling must be free enough so that its cost does not constitute an effective barrier to education. *Effectively*

⁴ Ely, Richard T., and Wicker, G. R. *Elementary Principles of Economics*. New York: Macmillan Co., 1930. p. 383-384.

⁵ Taussig, F. W. *Principles of Economics*. Vol. I, Fourth Edition. New York: Macmillan Co., 1939. p. 91.

free schooling is schooling provided under such conditions that persons who should have the schooling are not debarred from it by financial reasons. As Clark writes:

“ . . . no school and no education is free until an individual who does not have money, or whose parents do not have money, can attend that school or obtain that education. . . . One of the results of lack of free schooling in the United States is that millions of people are in the lower paid occupational groups, such as unskilled labor, and in the lower grades of clerical occupations. In a large number of cases such conditions reflect not at all upon the ability of the people involved. They are a reflection upon a society that holds sacred a myth that free education is being provided.”⁶

Because effectively free schooling is necessary to obtain maximum income, the economically wise society will continue making additional amounts of education effectively free, so long as the income which accrues from increased efficiency and added value resulting from augmented productivity exceeds the cost of these additional educational expenditures. This will be done because there will be more left to buy other goods and services after such education is paid for than there would be if such education were not provided.

We now provide free tuition in the elementary and secondary levels of education. This is a wise policy but it does not go far enough. Effectively free schooling requires more than free tuition. It means that food, clothing, medical aid, and shelter will be provided if the lack of such provision will keep one from school.

Realization of maximum economic returns from education requires that it be effectively free. It also requires that the right kind of education be available. The kind of education needed was dealt with in the preceding chapter. Here

⁶ Clark, Harold F. *An Introduction to Economic Problems*. New York: Macmillan Co., 1936. p. 133-134.

it is sufficient to emphasize that it is futile to remove financial barriers to school attendance if the educational offerings are not of the right type. It is necessary for the individual to know the callings in which his capacity and aptitude will permit him to succeed. He must be able to identify the vocation in which he will be able to earn the largest returns. He must be able to secure the education, both general and occupational, required in this vocation. He must be able to keep his occupational knowledge up to date. He must be able to retrain for another occupation, if changing conditions justify. When such educational offerings are made effectively free, the principle of equal educational opportunity is realized. The outcome is a more efficient population with increased productivity. To the extent that this results in increased income over and above the cost of education, the total national income is augmented.

*General Well-Being Should Determine
Numbers Trained.*

Objections to an educational program which will permit persons to work in the manner and in the occupations where total income will be largest usually rest upon two assumptions: First, it is assumed that if too many workers are trained there will not be enough left to perform the unskilled labor that society needs. Second, it is assumed that if too many workers are trained, there will not be enough skilled and professional work to go around and therefore some of them will be unemployed. Let us examine these assumptions.

The old argument that many unskilled workers will always be needed as "hewers of wood" and "drawers of water" falls down in a technological society. In Egypt, India, and China, men still serve as beasts of burden. In western nations a skilled worker running a circular saw and a few engineers operating a municipal water system

supply wood and water in greater abundance and at less cost. As the number of trained workers increases, mechanical ways will be found to perform routine work. The training of unskilled workers should continue subject only to the limitations of their capacity and willingness to take the training involved. The economic efficiency of a society increases as its proportion of unskilled workers of low productivity decreases. This is equivalent to saying that total productivity and total income tend to be increased as workers become intelligent and skilled.

The second argument is that there will not be enough technical and professional work to go around if too many workers are trained and that unemployment will result. This assumes either that there is a relatively fixed social demand for technical and professional services, or that there is a relatively fixed ratio between the number of technically and professionally trained workers, which society can absorb, and unskilled laborers. A little thought will show that neither of these positions is sound. For more than a century growing numbers and percentages of workers with technical and professional training have been employed in the United States. There is a genuine social need for further increased amounts of services of the type which only trained persons can perform. The need for more medical service and better housing are but two of the many demands which can be met only by trained workers.

How many technically and professionally trained persons can a nation use? A practical answer to this question is offered by an illustration. Let us assume that the decision has to be made as to whether the building of needed irrigation systems will be advanced more by additional engineers or by additional unskilled laborers. As long as additional engineers produce more than additional unskilled laborers and the total income of the country is increased by more

than enough to pay the cost of training, unskilled workers should be displaced by engineers.

If conditions of work were such that engineers did nothing but push a pencil, a stage would soon be reached where an additional engineer would produce less than another unskilled worker. In a technological society, however, the probability is that the trained engineer would find a better way to perform the work of digging irrigation ditches. As Taussig states: "A wide diffusion of education is a most effective means toward productiveness. It is effective particularly toward stimulating and diffusing new kinds of efficiency."⁷ There is no fixed ratio of engineers to unskilled laborers in construction projects. It is probable that in building the Pyramids a few engineers and foremen sufficed to direct thousands of human beasts of burden. Compare this with the ratio of engineers to unskilled laborers on a modern construction project involving steam shovels and other power-driven machines.

The foregoing does not assume that the amount of technical and professional employment available can be trusted to increase automatically regardless of the number of workers trained. The experience of the past decade clearly shows that this does not happen. Economic maladjustments have denied employment to many qualified workers, skilled as well as unskilled. Even during longer and more normal periods it is essential that the trend of effective demand for technical and professional workers be carefully estimated. Facts, both as to the total number of skilled workers as well as the demand of specific callings, should be taken into account in developing facilities for technical and professional training and in offering advice to youths preparing for occupational life.

Acceptance of the foregoing, however, is quite different from assuming that there is a fixed ratio of skilled to un-

⁷ Taussig, F. W. *Op. cit.*, p. 89.

skilled workers. Periods of depression and economic maladjustment have been overcome in the past. Without underestimating the formidable nature of the economic difficulties of the depression period, there is reason to expect that human intelligence will find solutions for them. This will permit our economy to absorb larger numbers and percentages of technical and professional workers.

The most extensive investigation of overcrowding and unemployment in the professions was made by Kotschnig during the worst years of the depression. It revealed that thousands of persons trained for the learned professions were out of work in more than a score of countries. Although this investigation found that many universities and professions are overcrowded in most of the larger nations, it offers as a solution not less education but more of the right kind of education where it is most needed. In discussing education in terms of social and economic needs, Kotschnig's general conclusion is:

" . . . that there can never be too much education and that any restrictive measures are a counsel of despair. It is too easily forgotten by those who oppose every expansion of educational facilities, or who advocate restricting the numbers of students in secondary schools and in the colleges and universities, that education does not only prepare people for work. It serves the advance of knowledge and understanding, it enriches the life of the individual, it creates the general conditions on which social and economic progress depend. In so far as education serves these general purposes, no restrictions can be justified that debar able young people from any type of school, including the institutions of higher learning."⁸

The plan of effectively free education proposed in this report is a long-term and comprehensive program. It assumes that adequate information as to occupational supply and demand, and appropriate training facilities would be

⁸ Kotschnig, Walter M. *Unemployment in the Learned Professions*. London: Oxford University Press, 1937. p. 315-316.

gradually but comprehensively installed, taking account of the requirements of the total economy. The result would be that certain callings now over-supplied because of lack of adequate occupational information and superficial, popular ideas as to their desirability would be gradually relieved. Youths would be continuously encouraged to prepare for old and new occupations which facts and proper attitudes toward work suggest they should enter. Under present conditions a few callings tend to attract most of the youths of superior talent. The result in the long run tends to be an over-supply in certain callings and an under-supply in others. Under the proposed program every calling which promises genuine vocational opportunity would be competing for such talent. In the latter situation, the main problem in most callings requiring advanced technical and professional training would be one of obtaining enough recruits possessing requisite capacity and diligence to meet the requirements.

From a long-term point of view, it appears sound to develop an educational program which will permit individuals to work in the manner and in the occupations where total income will be the largest. As long as reductions in the numbers of unskilled workers and increases in skilled workers tend to raise the total income of a country, this process should go on. It should be allowed to continue, from an economic point of view, until the cost of training equals the extra value of additional goods and services produced. The number which then remains in unskilled labor will be the proper one for the nation concerned. If it stops short of this point the total income is held down.

*There Are Tests of the Proper Limits
of the Educational Expansion.*

An analysis of the present situation suggests that it will be sound economic policy to increase further the amount

of educational opportunity. How much further this should be continued cannot be stated exactly. There are certain tests, however, which may be used in discovering whether a nation is approaching the point of diminishing returns in extending educational opportunity, so far as its economic effects are concerned.

One test would be the development of a situation where additional schooling would no longer tend to reduce extremes in income. This would mean that differences in incomes of workers were due to differences in capacity and diligence, rather than to differences in educational opportunity. When all persons are given the same opportunity to obtain the schooling and training essential to occupational efficiency, then differences in earnings are not accentuated by unequal opportunity. Under conditions existing in the United States at present equal educational opportunity does not exist. All persons do not have the same opportunity to capitalize their talents. Therefore we should continue to expand educational opportunity until differences in earnings of individuals due to the factor of scarcity of workers in certain callings, except as this scarcity is an outcome of differences in capacity and diligence, have been greatly modified. One role of education in a democracy is to remove factors, other than those named above, which result in differences in income.

We know that the amount of education thus far provided in the United States is insufficient to fulfill this role. Differences in earnings are enormous and one of the reasons is that many who have both the capacity and diligence to qualify for the occupations where there is a scarcity of workers, and therefore a chance to earn high incomes, are unable to obtain the schooling and training required. Accordingly, the point of diminishing returns in expanding educational opportunity has not been reached from the economic standpoint.

At this point it is important to consider further the relation of education to individual incomes. It is commonly said that education greatly increases the income of the individual who receives it. This may be true in many cases. But if this condition exists, it usually indicates that an insufficient number of people are being trained for the particular occupations that educated persons are entering. That is, the increase in income is probably due to the fact that individuals with such training are scarce and can secure a greater return for their services.

In former days almost all types of education had their scarcity value. It remains true even today that only the more able and fortunate people can secure certain types of training. As a result, those enjoying formal schooling and other advantages which often go with it, such as superior family environment, have far larger incomes in later life than the uneducated ones.

Persons with Larger Amounts of Schooling Generally Have Larger Earnings.

Numerous studies⁹ made in the past have presented data showing that individuals with larger amounts of schooling generally earn larger incomes. A recent investigation by the American Youth Commission of 5576 employed youths, aged sixteen to twenty-four, showed that in 1938 median weekly wages ranged as follows with completion of the grades indicated: sixth grade, \$8.75; eighth grade, \$10.89; twelfth grade, \$14.46; two or three years beyond high-

⁹ Caswell, Ellis A. *The Money Value of Education*. Bureau of Education, Bulletin, 1917, No. 22. Washington, D. C.: Government Printing Office, 1917. 52 p. This bulletin brings together conclusions of 126 articles and statements made concerning the economic value of education. For a more recent summary and interpretation of studies of this type see: Brunner, Edmund deS., Chairman. "The Social Background of Education." *Review of Educational Research* 10:1; February 1940.

school graduation, \$19.74; and college training, \$22.23.¹⁰ This study reports that:

"Starting with the highest occupational level of the professional and technical workers, and going down the occupational scale to the unskilled laborers, one finds an unbroken downward trend in the median grades attained by the youth in each occupational group. Between the two occupational extremes, there is a difference of almost eight grades.

". . . it is reasonably safe to assume that a young person who has had the advantage of a high-school education will earn 50 per cent more than the youth who chooses, or who is forced, to leave school before he has finished the eighth grade."¹¹

This study also reports that the chief effect of grade attainment upon earnings is "its tendency to place the better educated youth in the more lucrative occupational fields." Young people with different amounts of training, when doing the same work, are usually paid the same wage, but only a few with limited schooling find employment in the better-paid occupations.

A recent survey of conditions in New York State shows that high-school drop-outs get jobs which pay less, rank lower in the industrial scale, and offer few chances for advancement. This survey reports, "Not merely with respect to wages but in practically all other vocational matters, failure to have completed the high-school program represented an especially serious disadvantage among the girls."¹²

Several studies have investigated the relation of vocational training to earnings. Reports of the Regents' Inquiry show that in 1937 fewer recent graduates of vocational high schools were unemployed and that they received

¹⁰ Bell, Howard M. *Youth Tell Their Story*. Washington, D. C.: American Council on Education, 1938. p. 120-124.

¹¹ *Ibid.*, p. 94, 121.

¹² Spaulding, Francis T. *High School and Life*. New York: McGraw-Hill Book Co., 1939. p. 81.

higher wages than graduates of general high schools.¹³ This seems to suggest the desirability of carefully considering whether more definite attention should be given to the vocational education of youths who expect to go to work immediately on leaving high school.

A Chicago investigation studied educational and economic status as indicated by median school grade completed and median rental paid by people in each census district of the city. It was found that in general advanced educational status accompanied payment of higher rentals.¹⁴

*Proper Interpretation of Relation of Schooling
to Individual Earnings Is Important.*

Studies such as those cited in the preceding paragraphs generally show that persons with larger amounts of schooling earn larger incomes. The results look impressive. This fact has led to many misinterpretations of such data.

The general procedure used in most studies of the relation of amount of schooling to individual income has been to average the incomes of a group who had a certain amount of education and to compare this average with the averages received by groups with more or less education. This procedure fails to take account of factors, other than amount of schooling received, which vitally affect individual income. Many such factors operate. The increasing difficulty of education as higher levels are reached results in selection. Youths of superior ability tend to reach a higher educational level. Higher native capacity tends to produce higher income. Also high-school and college graduates are likely to come from families with favored eco-

¹³ Eckert, Ruth, and Marshall, Thomas O. *When Youth Leave School*. 1939. p. 305; and Norton, Thomas L. *Education for Work*. 1939. p. 18-21. New York: McGraw-Hill Book Co.

¹⁴ Lang, Richard O. *The Relation of Educational Status to Economic Status in the City of Chicago by Census Tracts, 1934*. Chicago: University of Chicago Press, 1937. 60 p.

nomie status. On graduation they are more apt to secure higher-paid jobs because of family connections. They are also more likely to receive inheritances. On the other hand, youths who drop out of school at an early age frequently have handicaps in addition to lack of education which tend to limit their earnings. These and other factors affecting income were not equated in the foregoing studies. As a result they do not measure the extent to which individual earnings are due to amount of schooling as opposed to other factors.

This is not to deny that schooling, up to a certain point, may actually enable the individual to earn a larger income than he would have been able to earn if he had completed a lesser amount of education. When groups are studied by the best available methods and their incomes are compared, it appears probable that schooling up to a certain point tends to increase individual earnings.

It is likely to be a long time before a completely reliable answer to the problem is found. In the meantime a few studies are available which throw some light on the question. One of the best of these is that reported by Gorseline in 1932. His study of 185 pairs of blood brothers attempted to make comparisons of their earnings in 1927 in such a way as to allow for the effects of differences between the brothers in age, residence, health, age of marriage, number of children, inheritance, and average money gains and losses due to "good luck" and "bad luck." His comparisons of the incomes of these brothers showed that in the average case a difference of three and a half grades of schooling resulted in an addition to annual income of somewhere between \$350 and \$515.¹⁵

There are undoubtedly larger opportunities in occupations which college trained persons enter. They generally

¹⁵ Gorseline, Donald Eugene. *The Effect of Schooling Upon Income*. Bloomington, Ind.: Indiana University, 1932. p. 141.

receive much higher earnings and suffer less unemployment. This is illustrated by a recent investigation of the United States Office of Education of the economic status of 46,000 graduates of 31 universities in 20 states for the period 1928-1935.¹⁶ In 1936, after eliminating those not in the labor market, since they were engaged in graduate study or as housewives, it was found that 96 percent of all the men and 93 percent of all women were either permanently or temporarily employed. Sixty-three percent of the men and 67 percent of the women were employed in professional occupations, and an additional 17 percent of the men and 29 percent of the women were in such general occupations as agriculture, clerical work, domestic service, and manufacturing. For 5000 alumni one year out of college the median salary in 1936 was \$1314; for 3000 eight years out of college, the median salary was \$2383. Corresponding median salaries for women were \$1092 and \$1606.

Clark's study reveals an enormous range of earnings between professional workers and unskilled labor. His conclusion is that "in so far as income is a test, more people should go into some of the professions; and people should be shifted from unskilled labor and farming."¹⁷ In counseling youths as to their future vocations, such data as the above should be considered along with such factors as native capacity, deep-seated interests, and scholastic accomplishment.

It is impossible to make any general statement about the effect of education upon income that will be accurate in all individual cases. The financial return for training in a given field depends largely on the number of persons who

¹⁶ Greenleaf, Walter J. *Economic Status of College Alumni*. Washington, D. C.: Government Printing Office, 1939. p. 56, 63, 65, 68, 69.

¹⁷ Clark, Harold F. *Life Earnings in Selected Occupations in the United States*. New York: Harper and Brothers, 1937. p. 3.

happen to be trained for that particular occupation. As Irving Fisher long ago pointed out, it is perfectly possible for a trade school to lower the wages in the trade. A situation could easily be imagined where there are relatively few persons in a trade in a given city. A trade school is established; excessive numbers are trained; the available supply outgrows the demand; and the wages in this field decline in relation to other wages in the city. On the other hand, restrictions of entry into a calling may be one of the causes of high income in that calling. A recent study¹⁸ shows that this is the case in certain of the professions.

Edie thus bluntly states the situation: "Educated labor does not receive relatively high wages because it is educated, but because there is a scarcity of the educated workman."¹⁹ Remove the scarcity and you lessen the relative advantage of those with the education. This should be a major economic role of education in a democracy so far as the scarcity is based upon artificial factors rather than capacity and diligence.

The part of this argument that is misunderstood by many people is that the *total income* of the country goes up and reaches a maximum, so far as schooling affects it, only when the differences in income which are due to artificial barriers and which can be eliminated by schooling are eliminated. Additional amounts of schooling should be provided until their cost equals the increased value of extra goods produced through greater efficiency of workers. The point which must be clearly recognized is that with more education a greater total amount of goods and services can be produced.

¹⁸ Kuznets, Simon, and Friedman, Milton. "Incomes from Independent Professional Practice 1929-1936." *Bulletin*, National Bureau of Economic Research, 72:17; February 5, 1939.

¹⁹ Edie, Lionel D. *Economics: Principles and Problems*. Second Edition. New York: Thomas Y. Crowell, 1926. p. 269.

It is true that, at the same time, a more nearly equal distribution of the total earned income will be achieved; however, it will be not just a distribution of the present total income, but of an amount greater than the present total. Thus we return to the original proposition, that the income of a country can be maximized only when barriers to occupations, which are created by lack of education, are largely removed. Each worker is thus enabled, so far as schooling can serve the purpose, to work in the occupation in which he can best produce goods and services for himself and for society. Since certain callings are, or should be, confined to persons of superior ability, it means that youths possessing such ability should not be debarred by lack of finances from securing the special training which these occupations also require. According to Clark, "Occupational distribution is correct when people of the same ability receive the same wages in all occupations."²⁰

The foregoing evidence shows that on the average, persons with larger amounts of schooling have larger earnings. The naive interpretations and conclusions which have sometimes been drawn from this fact in the past cannot be accepted. There are numerous factors other than schooling which at least in part may be responsible for the larger earnings. It will be impossible to state with certainty that there is, or that there is not, causal relationship between level of schooling and individual earnings until the matter has been much more carefully investigated.

The conclusion that does seem justifiable is that the economic reasons for providing education have become largely social. Adequate provision for the right kind of schooling tends toward a more equitable distribution of educational opportunity and of earned income. It also tends to increase the total social income. This, of course, in the long run, will increase the income of most individuals.

²⁰ Clark, Harold F. *Economic Theory and Correct Occupational Distribution*. New York: Columbia University Press, 1931. p. 69.

The general effects of education upon incomes, then, seems to be an increase in many low incomes, probably a relative decrease in some of the large incomes, a consequent decrease in the extreme variations of earned incomes, a higher average income, and an increased total national income.

Our Economy Calls for Further Extension of Educational Opportunity.

A second test of the proper limits of educational expansion grows out of analyses of the nature of our economic system and its demand for trained workers. Our economy promises to be one of increasing scope and complexity. It will demand more and more economic intelligence and occupational training on the part of an increasing portion of the population. Technological developments will bring constant changes in occupational specifications. Rapid occupational obsolescence will result. Economic conditions will probably be such that an economically wise society will set up a continuous program of training and retraining available to any of the population who may need it at different times throughout most of their working lives. These and other probable future characteristics of our economic system seem to indicate that the amount and availability of education must continue to increase if economic needs are to be met.

Human Capacity Conditions Educational Provisions.

Another crucial test as to whether a nation is approaching the point of diminishing returns in extending educational opportunity involves assumed or actual limitations of human capacity and diligence. The demands of some callings are so severe that many individuals appear to lack the necessary innate mental and physical capacity, or are

unwilling to undergo the rigorous training and work required. No expansion of school facilities will permit some youths to qualify for the higher reaches of professional, technical, scientific, literary, artistic, and political service. The supply of Einsteins and Edisons is likely to be limited even under an optimum expansion of educational opportunity. Has the point been reached in this country when youths generally are receiving as much training as their capacity and diligence justify?

In answering this question it may be said that a portion of youths found in high schools, colleges, and universities demonstrate neither aptitude nor energy in capitalizing opportunities offered. Such a situation is undesirable whether the cost is met from private or public funds. On the other hand the effect of eliminating a substantial percentage of youths from school before the age of probable employment, even though the bases are lack of competence and effort, needs to be carefully appraised. Early elimination from school would immediately reduce the bill for education. It would, however, involve placing the stamp of school failure upon many youths followed by periods of enforced idleness. The influences under which youths are thrown in such periods are likely to be disastrous. They are apt to develop attitudes that are negative considered from economic as well as other viewpoints. Will such treatment of youths in the years just preceding the time when they can expect to enter mature vocational life add up to an economic gain?

It is extremely important that in seeking to eliminate waste in educational expenditures we do not lose more than we gain. Denial of educational opportunity, based either on assumed lack of native capacity or diligence and effort, needs to be critically examined. Some have always emphasized the innate shortcomings of the masses of mankind. Reading, writing, and arithmetical computation were

once the basis of occupational preferment on the part of a small fraction of the population. It was thought that only the intellectually elite could absorb training in these skills. Now practically all learn to read, write, and cipher, and make daily use of these important tools.

The extreme deterministic school of psychology has far from established its claims. At this time it seems sounder policy to act on the democratic belief in the improvability of man. Cultural environment and opportunity play an important role in determining human achievement. The degree to which individuals master technical and intellectual processes is probably as much an outcome of the drives and conditioning influences which the culture provides—involving incentives which the individual feels from others, formal and informal, facilities for learning, opportunities for recurring functional use, and rewards given for effective social application—as innate capacity. Taussig points out that:

“The public schools, both by the direct effect of their training and still more by their indirect effect in breaking the thralls of environment, open the way to something better.”²¹

The period during which the school has been a social institution dedicated to the task of equalizing opportunity has been brief indeed. Purposes and methods developed when education was a privilege of a favored minority still dominate too many schools and colleges. It is only recently that genuine efforts have been made to provide educational facilities suitable for the majority of youth. This effort should be intelligently and vigorously continued for at least another generation before deciding whether it is possible to develop a program of education which will enlist the best efforts and arouse the full enthusiasm of American youth.

²¹ Taussig, F. W. *Op. cit.*, p. 239.

The vital interest of youth in qualifying for mature participation in occupational life is not doubted by those who have contact with them. Surveys show that what unemployed youths, as well as those in school, want most is the assurance of a job. A study of the conditions and attitudes of 13,000 young people in Maryland between the ages of sixteen and twenty-four, for example, revealed a very real demand on their part for training in professions, trades, and crafts. The fact that half of those "found to be employed on unskilled jobs desired some kind of vocational training, and that half of this number wanted training in some trade or craft, is not only a refreshing item of realism, but a definitely hopeful sign."²²

Surely school systems which are genuinely democratic in purpose, organization, and procedure can find means for capitalizing this interest. The difficulty with secondary education today is that its orientation, content, and method are still too much shaped in the college preparatory pattern. This, in spite of the fact that only a minor fraction of high-school graduates have ever gone on to college and that this fraction is smaller now than it was in 1900.²³ The Regents' Inquiry stated the need thus:

"The program of secondary education must produce more tangible results than at present in the form of systematic preparation for citizenship, leisure and jobs. If it is to accomplish all that needs accomplishing, that program must concern itself quite as much with young people who are not academically successful as with those whose easiest learning comes from books."²⁴

²² Bell, Howard M. *Op. cit.*, p. 72.

²³ In 1900 the ratio was 1 college student to each 2.9 secondary-school students. In 1910 the ratio was 1 to 3.1; in 1920, 1 to 4.2; in 1930, 1 to 4.4; in 1934, 1 to 5.8; and in 1936, 1 to 5.3 . . . In other words, roughly speaking, *only half as large proportions* of high-school students go into college now as was the case in 1900. *Abridged Statistics of Higher Education, 1935-36*. U. S. Office of Education, Bulletin 1937, No. 2, 1938. p. 7-8.

²⁴ Spaulding, Francis T. *Op. cit.*, p. 120.

Waste, due to offering educational opportunity to youths who cannot or will not profit from it, should be eliminated. It is important, however, that considerations dealt with above be taken into account before acting on this matter. It is also of fundamental importance that we eliminate waste resulting from denial of educational opportunity to youths who can and will profit from it. Data presented in the next chapter reveal that a tremendous reservoir of youthful talent and energy now goes untapped. Tens of thousands of competent high-school graduates each year find it impossible to continue their schooling. So long as this condition obtains, the United States, even with its unprecedented expansion of higher education, is still short of the saturation point in expanding educational facilities.

*The Amount of Education Provided
Should Be Further Increased.*

The preceding discussion can be summarized as follows. From the economic standpoint the quantity and quality of schooling should be determined primarily by the contribution it makes in increasing total national income. There are sound economic reasons for making it possible for larger numbers of young people to continue their schooling for longer periods. An insufficient number are being trained for occupations where wages are high and in which educated persons find employment. Differentials between the earnings of individuals should be due to variations in personal ability and zeal and not to inequalities in educational opportunity. From the standpoint of economic efficiency, there should be only two limitations upon the expansion of educational opportunity. The first is the limitation which may be set by personal ability or willingness to profit from the schooling offered. The second involves the relation of the cost of providing additional education to resulting economic dividends in the form of increased national in-

come. When considered from the economic viewpoint alone, increases in national income must be greater than the cost of the additional schooling.

An analysis of existing conditions shows that neither of these limitations now operates. There are tens of thousands of able and willing American youths who are anxious to secure the additional training which would permit them to qualify for higher-paid callings. The nature of our economic system is such that it calls for and is able to translate increasing amounts of economic intelligence and technical skill into increased productivity and income.

The point of diminishing economic returns has not been reached in the United States in expanding educational opportunity. We cannot say with scientific exactness just how much farther this expansion should go. This, however, need not prevent the adoption of educational policies clearly pointed in the right direction.

Some would argue that increasing levels of economic welfare make possible larger amounts of schooling rather than the reverse. The actual situation probably is that neither schooling nor economic well-being is solely the cause of the other. The relationship is not this simple. It is more likely one in which there is a constant interplay between the two factors—an adequate amount of the right kind of schooling and the existence of economic well-being. Neither is solely responsible for the other and neither can develop to a high level unless the other is present. If one is to assume permanent economic maladjustment and inefficiency obviously it would be extremely difficult to extend educational opportunities. Likewise, if one were to assume permanent illiteracy and ignorance, a high level of economic well-being would be impossible. It is futile to argue from either of the foregoing assumptions. Rather the question is, having developed a complex and relatively efficient economic system involving the labor and coopera-

tion of millions of literate and intelligent workers, what is necessary in order that this economic system may be made more efficient? The answer appears to be that one of the necessary elements is an appropriate increase in the quality and amount of schooling. Likewise, when better education and other factors, such as improved technology and management, have brought about greater economic efficiency, then it will be easier to pay for increased amounts of schooling. Thus the cycle progresses.

Preceding paragraphs have revealed certain facts with more or less definiteness. We know that the amount of schooling provided all people in the United States has increased with industrial development. We know also that an advance in the minimum amount of schooling has occurred in all highly industrialized nations. We know that, within limits, education tends to increase the earning power of the individual. We know that increased public expenditures for education have been followed, as a rule, by corresponding gains in per capita wealth. We know that many people of real ability are not receiving as much training as they can effectively use. We know that many industrial and agricultural operations now conducted at a great expense in man-power could be done more efficiently and with less effort through the application of machinery guided by technically educated workers. So we can move toward our goal even though we do not know exactly how far away it is or foresee all the difficulties in the way.

An Immediate Goal Is a Universal Minimum of Compulsory School Attendance of at Least Ten Years.

The *average* amount of education now being obtained by the youth of this country is probably at least ten years. It is proposed that the next step be to raise the *minimum* everywhere to ten years of schooling through revision of compulsory attendance legislation. This is a practical goal. It would merely be necessary to move those who are now

educationally under-privileged up to the present average of educational opportunity.

The compulsory school attendance laws of some states already require ten years of schooling for every child. In most cases the requirement is seven or eight years. The least that any state demands is five years. With existing mobility of labor from one state to another it is highly important from the standpoint of national welfare that the ten-year minimum be made nationwide.

This proposal is a desirable first step towards maximizing the economic effects of education throughout the United States. It is also in agreement with the future development of American education outlined by the Educational Policies Commission in *The Structure and Administration of Education in American Democracy*. That report suggested that it would be advantageous to reorganize American education so as to begin with a six-year elementary school, followed by a four-year junior secondary school and a senior secondary school with courses of study varying in length from two to four years. Under that plan general education would be provided for all boys and girls during a ten-year period.

The Regents' Inquiry proposed that in New York State the age requirement for compulsory school attendance be supplemented by evidence "of a pupil's ability to get and hold a full-time job."²⁵ This is eminently desirable. Compulsory school attendance should continue for all pupils until society is prepared to offer suitable employment.

Every state and community should do all it can to exceed the proposed compulsory, ten-year, national minimum. Various types of measures are appropriate to this purpose. Entirely new legislation is necessary in some instances. In other cases it may merely be necessary to plug loopholes in existing compulsory attendance laws or to create adequate machinery for enforcing laws already en-

²⁵ Spaulding, Francis T. *Op cit.*, p. 301.

acted. Where conditions of poverty in the family are so severe as to prevent attendance, appropriate remedial and relief measures are obviously called for, not merely on economic grounds, but on grounds of common humanity as well.

The first step in providing the amount of education requisite to maximizing its economic effects should be the extension of the universal minimum of compulsory school attendance to at least ten years. Concurrently, a second phase of the program should begin.

The Average Amount of Schooling Obtained by American Youths Should Be Increased to Fourteen Years.

All qualified youths should be encouraged and assisted to go beyond the ten-year, compulsory minimum. The amount of schooling beyond the minimum should be gradually increased so that the *median* youth will complete four years in the senior secondary school before terminating his formal education.

This proposal is in line with the growing tendency of industry to advance the age of initial employment. It also recognizes that effective citizenship demands increased economic knowledge and understanding, which can be met by developing general education in directions outlined in Chapter III. It accords with the trend of increased enrollments in junior colleges and the first two years of the four-year college. It also is in line with the following statements in publications of recent committees:

“Universal education suited to the needs of groups and individuals (should) be provided and required at public expense for youths of all ages from early childhood until such time as proper employment is advisable and obtainable.”²⁶

²⁶ Norton, John K., Chairman. *Report of National Conference on the Financing of Education*. Washington, D. C.: National Education Association, 1933. p. 18.

“. . . the equivalent of at least twelve full-time years of formal schooling should come to be regarded as the standard minimum equipment of the American citizen . . . Better than universal full-time attendance until 18, and perhaps less expensive, would be full-time attendance until 16 and half-time attendance until 20 or 21.”²⁷

“The reorganization of secondary education will involve the inclusion of the junior college as a part of the common school system.”²⁸

“In terms of school grades, secondary education . . . begins with the work of grade seven under the organization now widely accepted as appropriate for the American school system. Ideally it ends in the case of a given individual either when he leaves school prepared to be self-supporting and self-directive, or when he completes the level of work ordinarily provided in the first two years of the undergraduate college.”²⁹

“The establishment of new programs of semiprofessional training will make it necessary for certain secondary schools to add one or more grades beyond the twelfth. If it is to be effectively planned and coordinated, the work of these lower and higher grades ought to be under the same supervision as that of the four grades now included in most of the high schools. Accordingly, the seventh grade through the twelfth, and in addition such higher grades as may be organized in connection with the needed upward extension of secondary school work, should be recognized in each school system as secondary grades.”³⁰

In increasing the amount of schooling obtained by youth, much can be done to improve the holding power of schools

²⁷ Douglass, Harl R. *Secondary Education for Youth in Modern America*. Washington, D. C.: American Council on Education, 1937. p. 24, 86.

²⁸ National Education Association and the American Association of School Administrators, Educational Policies Commission. *The Structure and Administration of Education in American Democracy*. Washington, D. C.: the Commission, 1938. p. 13.

²⁹ Briggs, Thomas H., Chairman, Committee on the Orientation of Secondary Education. *Issues of Secondary Education*. Bulletin of Department of Secondary School Principals, National Education Association, January 1936. p. 27.

³⁰ Spaulding, Francis T. *Op. cit.*, p. 284.

by proper guidance and by developing a variety of educational programs suited to the needs and interests of all types of children and youth.

As was pointed out at considerable length in the preceding chapter, it is not assumed that more of just any kind of education will increase economic efficiency. The education contemplated must be reasonably adapted to the end in view and the learner must be capable of profiting by it. The recommendations of a universal minimum of ten years of compulsory schooling and of fourteen years for the median American youth require that educational programs be planned according to youths' varying capacities and needs, and in accord with the demands of our economy as pointed out in various chapters of this report. This will result in the provision of the kind and amount of education needed to maximize its economic effects.



VI.

EXISTING AND DESIRABLE AMOUNT OF EDUCATION FOR ECONOMIC WELL-BEING

*The removal of all artificial barriers to choice
of occupation is the most important goal of society.*

—FRANK WILLIAM TAUSSIG.

The preceding chapter dealt with the amount of education required in order that the nation might realize maximum economic effects. This chapter examines the degree to which this required amount is provided under existing practice in the United States. To what extent does the present distribution of educational opportunity make it possible for all persons to work in a manner and in the callings where their earnings will be highest? To what extent is education effectively free in the United States?

Educational opportunity above the elementary-school level is offered an increasing percentage of the nation's youth. The expectancy of high-school graduation increased

nearly three times in the twenty years from 1918 to 1938. In the former year, the number of high-school graduates represented but 13.9 percent of the number enrolled in the fifth grade seven years previously. In 1938 this percentage had risen to 39.8.¹ Approximately 65 percent of the persons between the ages of fourteen to seventeen now attend public or private high schools. A parallel growth has occurred at the higher education level. Today 13 percent of those aged eighteen to twenty-one attend colleges or universities.²

In spite of the growth indicated by these figures more than half of youth find it impossible to graduate from high school, and a small fraction of all youth enter and complete college. Although the number of high-school graduates has greatly increased, the percentage of those who continue on into college is now less than in 1900. It has long been known that a selective process operates at high-school and college levels. Counts' well-known study of nearly two decades ago concluded that opportunity at the high-school level was largely a matter of family status and reflected inequalities of family means and ambition.³

From a strictly economic point of view, our major concern is to discover the basis of this selection. Is it one which promises the largest economic dividends according to the criteria of the preceding chapter? Does a youth's continuance in school rest upon his capacity and willingness to absorb training provided, or do other factors govern this selective process?

¹ Foster, Emery M. "School Survival Rates." *School Life* 23:265-266; March 1938.

² National Education Association and American Association of School Administrators, Educational Policies Commission. *The Effect of Population Changes in American Education*. Washington, D. C.: the Commission, 1938. p. 35-37.

³ Counts, George S. *The Selective Character of American Secondary Education*. Chicago: University of Chicago Press, 1922.

*Lack of Finances Is a Major Cause
of Withdrawal from High School.*

Many investigations have been made as to why youths leave school. They all show that economic necessity is one of the chief reasons. The National Survey of Secondary Education,⁴ made before the full effects of the depression were felt, found that 31 percent of youths left school for economic reasons. A more recent study by the American Youth Commission put the proportion of youth leaving secondary school for economic reasons at 54 percent.⁵

An investigation, involving 30,000 youths in a number of different cities who had left school after graduating from the eighth grade, reveals that the principal reason given for quitting school was lack of funds—48 percent gave this reason.⁶

It was the experience of the NYA, even though an average of 264,000 high-school pupils received aid in the years 1935 to 1938, that funds were by no means sufficient to aid all applicants. In the school year 1937-38, funds were sufficient for only 55 percent of the applicants.⁷ It is probable that those applying for aid represent only a part of the youth of high-school age who are not in attendance for economic reasons.

One of the most thorough studies of the relation of per-

⁴ Kefauver, Grayson N.; Noll, Victor H.; and Drake, C. Elwood. *Part-Time Secondary Schools*. Bulletin, 1932, No. 17, National Survey of Secondary Education, Monograph No. 3. Washington, D. C.: Government Printing Office, 1933. p. 32-33.

⁵ Bell, Howard M. *Youth Tell Their Story*. Washington, D. C.: American Council on Education, 1938. p. 64.

⁶ Works Progress Administration, Division of Research. *Urban Youth, Their Characteristics and Economic Problems*. Series I, No. 24. Washington, D. C.: Government Printing Office, 1939. p. 8.

⁷ Lindley, Betty and Ernest K. *A New Deal for Youth*. New York: Viking Press, 1938. p. 185-190.

sistence in school to economic status was made for the Regents' Inquiry in New York State. It concludes that:

"Any belief that the public secondary school is open on equal terms to all the children of all the people is seriously challenged by the steady increase, from grade to grade, in socio-economic status. Economic variables are admittedly not the only ones operating in withdrawal from school, for a substantial correlation also exists between school leaving and general scholastic aptitude. Nevertheless, the present results reveal decisively that the secondary school has not provided opportunities for its most handicapped pupils to overcome financial obstacles and to remain in school."⁸

Dailard's careful study estimated that in 1935-36 the difference between potential high-school enrollment (8,378,117) and actual enrollment (5,904,117) was 2,474,000. After reviewing a number of studies of small groups of high-school drop-outs, he took 30 percent as a conservative estimate of the percentage of children eliminated from public schools, primarily because of economic reasons. On the basis of this estimate, 742,200 of the children eligible for enrollment in Grades IX-XII in 1935-36 were out of school primarily because of low economic status. Dailard further estimated that of those enrolled in high school, 576,000 would need financial help if they were to remain.⁹

*Lack of Money Debars Many
Students from College.*

The economic factor is important in determining college attendance. In the Maryland study by the American Youth Commission, an analysis of the responses of the twelfth-

⁸ Eckert, Ruth E., and Marshall, Thomas O. *When Youth Leave School*. New York: McGraw-Hill Book Co., 1939. p. 84-85.

⁹ Dailard, Ralph C. *An Estimate of the Cost of Making Grades Nine Through Twelve of the American Common School Effectively Free*. Birmingham, Ala.: Birmingham Printing Co., 1939. 109 p.

grade graduates shows that almost half failed to proceed to a higher educational level because of lack of family funds.¹⁰

In New York State in 1933-34, 10,000 high-school graduates who desired to go to college or to take up other advanced study were unable to do so mainly for financial reasons. For the 750 scholarships awarded annually on the basis of competitive records in Regents' examinations by the University of the State of New York, there were 7938 qualified applicants.¹¹

Studies by McCall in South Carolina reveal that many worthy high-school graduates are prevented from going to college. Of the students in one area of the state, 46 percent of the women and 44 percent of the men stated that their families were unable to meet tuition and other fees requisite to college attendance. The conclusion is that college recruiting in South Carolina, because of inadequate "provisions for economic aid to worthy high-school graduates, is falling far short of its goal, if conservation and training of potentially able citizens is viewed as the desirable goal of South Carolina colleges."¹²

Lack of money to meet college expenses not only keeps thousands of youths from entering college but it is also one of the chief reasons for their withdrawal. A study of college student mortality by the United States Office of Education in twenty-five cooperating universities, registering 15,535 freshmen students in 1931-32, shows that before graduation 65 out of every 100 students left the publicly controlled universities as compared with 59 out of every 100 students in private universities. While "dismissal for

¹⁰ Bell, Howard M. *Op. cit.*, p. 66.

¹¹ Horner, Harlan H. *Report on Higher Education in the State of New York for the School Year Ending June 30, 1935*. Albany: University of the State of New York. p. 80-88.

¹² McCall, W. C. Communication to the Educational Policies Commission by W. C. McCall, Associate Professor of Education and Director of Personnel Bureau, University of South Carolina.

failure in work" was the chief cause of student mortality in both public and private institutions, "financial difficulties" ranked second. In 10 out of 24 universities, a larger percentage of students left for this reason than for any other single cause. In one university, 40 out of every 100 students withdrawing left because of financial difficulties; in another, approximately 35 out of 100; and in five others, the range was from 26 to 31.¹³

Low Family Income Limits High-School and College Attendance.

The reason why many youths are prevented from attending high school and college, purely for economic causes, is apparent from the distribution of family income in the United States. In 1935-36, "14 percent of all families (of two or more persons) received less than \$500 during the year; 42 percent received less than \$1000; 65 percent, less than \$1500; and 87 percent less than \$2500. Above the \$2500 level, there were about 10 percent with incomes up to \$5000, about 2 percent receiving between \$5000 and \$10,000, and only 1 percent with incomes of \$10,000 or more."¹⁴

Just how much income a family must have before it can afford the cost of delaying entrance into gainful occupation, and of financing necessary expenditures for attendance, of one or more children in high school or college cannot be stated with definiteness. Under modern conditions attendance even at a public high school involves considerable expense. The President's Advisory Committee on Education points out that "even though tuition may be free,

¹³ McNeely, John H. *College Student Mortality*. Office of Education, Bulletin, 1937, No. 11. Washington, D. C.: Government Printing Office, 1938. p. 48.

¹⁴ National Resources Committee. *Consumer Incomes in the United States, Their Distribution in 1935-36*. Washington, D. C.: Government Printing Office, 1938. p. 2-3.

attendance at high school is expensive to the pupils and their families.”¹⁵ There are certain items caused by school attendance, and necessary to that attendance, for which the family must pay. These vary in different communities, but among the most common are: textbooks and supplies, transportation, the cost of the extra-curricular program, and food and clothing when the cost of these items is increased by high-school attendance.

The expenses involved in college attendance are much greater than at the secondary-school level. Some tax-supported institutions now charge substantial tuition fees. Students frequently cannot live at home and this involves additional outlays for food and shelter. Even when it is possible to live at home a small tuition fee may be a formidable barrier. McCall's investigations suggest that “many worthy high-school graduates are prevented from coming to college by the relatively moderate costs which are characteristic of South Carolina colleges.” This was true “even though they can live at home and attend the university.”¹⁶

Under present conditions, most people would agree that it would be extremely difficult for a family with a total annual income of less than \$1000 to finance the high-school and college education of one or more children. Many would put the figure higher. Forty-two percent of the 29,400,000 families of two or more persons in the United States have a total income of less than \$1000. Farm families, not on relief, are conspicuously massed in the lower income levels—52 percent falling below \$1000.¹⁷

During 1935-36 the NYA helped thousands of boys and girls from families with low incomes to remain in high school. For example, in December 1937 out of approxi-

¹⁵ Advisory Committee on Education. *Report of the Committee*. Washington, D. C.: Government Printing Office, 1938. p. 100.

¹⁶ McCall, W. C. *Op. cit.*

¹⁷ National Resources Committee. *Consumer Incomes in the United States, Their Distribution in 1935-36*. *Op. cit.*, p. 24.

mately 223,000 NYA-aided junior and senior high-school pupils, "almost three-fourths were from families having an annual income of \$999 a year or less, and almost 40 percent were from families having an annual income of \$499 or less. More than half were from families of six or more members."¹⁸

A tabulation of NYA student-aid application forms filled out in the fall of 1937 shows that approximately 48 percent of NYA students came from families with an income of less than \$600 a year, and that 71 percent came from families with an income of less than \$900 a year.¹⁹ Over 53 percent of the NYA-aided college students came from families with less than \$1250 a year.

The Advisory Committee on Education, after reviewing the work of the NYA in aiding youths to continue in school, concluded: "There are presumably at least a quarter of a million young men and women receiving aid to whom on the average less than \$5 a month makes all the difference between going to school and not going to school. Yet this quarter of a million constitutes only three-fourths of all applicants for school aid, and there are probably many more youths whose circumstances would warrant aid although their need is not so great."²⁰

A study by the Wisconsin Association of Colleges and Secondary Schools involved the testing of 16,619 high-school seniors in that state in 1929. One of the conclusions was that "out of the 1660 high-school seniors in the highest tenth were 450 who expressed no intention to continue, but for whom further academic training would be a good investment for society. If we include the two higher tenths

¹⁸ Lindley, Betty and Ernest K. *Op. cit.*, p. 186.

¹⁹ Excerpt from letter of Orren H. Lull, Deputy Executive Director, National Youth Administration, to John K. Norton, October 13, 1938.

²⁰ Johnson, Palmer O., and Harvey, Oswald L. *The National Youth Administration*. Advisory Committee on Education, Staff Study Number 13. Washington, D. C.: Government Printing Office, 1938. p. 43.

there are 1198 students who indicated no intention of going on to college but from whose further education society might profit greatly.”²¹

A recent survey in Milwaukee, Wisconsin, of the further schooling status of 1023 public high-school graduates with intelligence quotients of 117 to 146 showed that less than half of them are in college. The chief explanation appears to be lack of money. This survey reports that when the 1023 students were divided into groups on the basis of family income, it was found that “the percentages of students not in college full-time range from 6 percent for the income group over \$5000, to 80 percent for the income group under \$500.”²²

Eckert and Marshall studied the effect of family economic status on continuation into college of high-school graduates in New York State. They found that among youths of equal intellectual and scholastic ability, 22 percent more went on to college from homes classified in the two upper categories as to socio-economic status on a seven-point scale, as compared with those coming from homes classified in the three lowest categories on the same scale. They conclude that “while financial handicap does not bar a student entirely from advanced training, very few young people from homes rated low in economic resources continue their training beyond the secondary level.”²³

A summary of findings of extensive studies made in Pennsylvania, Indiana, and Maryland by the American Youth Commission shows that:

“Considerable evidence supports the hypothesis of economic stratification. . . . This tendency was found to

²¹ Holt, Frank O. “Securing a More Highly Selected Student Body at the University of Wisconsin.” *Bulletin of the American Association of Collegiate Registrars* 8: 247-258; July 1933.

²² Goetsch, Helen B. “Inequality of College Opportunity.” *Journal of the National Education Association* 28: 271; December 1939.

²³ Eckert, Ruth E., and Marshall, Thomas G. *Op. cit.*, p. 160.

be more pronounced among male youth than among female youth. It existed even within such a selected group as employed high-school graduates. . . .

"These data show that education like other social characteristics is a matter of the income of the family, since in general income correlates highly with occupational groups. . . . The even distribution of educational opportunity as represented by the free tax-supported public high school is far from representing equal opportunity so long as there is such an uneven distribution of family income as now exists."²⁴

It would appear that, in general, children born into large families with low incomes have small chance of receiving a college education or professional training even when they outrank the average college student in ability.

Many Students of Superior Capacity and Diligence Are Denied Educational Opportunity.

The evidence is conclusive that many youths are unable to graduate from high school and attend college because of inability to meet the expenditures involved. What is the caliber of the youths eliminated? Do they possess the capacity and diligence which would permit them to qualify for occupations involving superior skill or technical knowledge and in which they could earn high incomes? The answer to this question determines whether conditions requisite to maximum productivity defined in the preceding chapter are met.

One of the early studies of this question was made by Zook in Massachusetts. He tested several thousand high-school seniors and studied their scores in relation to their plans with reference to college attendance. He discovered that those planning to go on to college were in general

²⁴ Rosander, A. C. "Economic Stratification of Youth and Its Social Consequences." *Journal of Educational Research* 32: 602-603; April 1939.

better academic risks than those not planning to continue their formal schooling. He concluded, however, that:

"... there are a considerable number of pupils in the senior classes of Massachusetts high schools who are not planning to continue their education, but who nevertheless are good college material, not to speak of their fitness for other types of education. Probably in all the Massachusetts high schools there are a thousand seniors who are not planning further study who give promise of success as college students, while an additional thousand have a fair chance of success. If these two thousand students were encouraged to continue their work and were provided with courses suited to their needs and abilities, they would amply justify the money necessary to provide their education."²⁵

Many other investigations have arrived at similar findings since the foregoing study of sixteen years ago. In the Pennsylvania study by Learned and Wood over 26,000 public and private high-school seniors, tested for general intelligence, English, mathematics, history, science, and language in 1928, were followed during the next two years to discover their educational and occupational distribution. This follow-up revealed that about 25 percent of the students who were in college for at least two years after leaving high school had lower high-school test scores than over half of those who left high school to go to work. The investigators concluded that colleges are not logically selective. "Taken as a group, the high-school pupils who go to college exhibit a superior *average*, but that fact takes no account of the able and often brilliant young minds that are left behind because they cannot pay college bills."²⁶

Colleges in Ohio are drawing almost a "run of the mine"

²⁵ Zook, George F. *Report of a Fact-Finding Survey of Technical and Higher Education in Massachusetts*. Massachusetts Legislative Document, House No. 1700, December 26, 1923. p. 89.

²⁶ Learned, William S., and Wood, Ben D. *The Student and His Knowledge*. New York: Carnegie Foundation for the Advancement of Teaching, 1938. p. 38.

sampling of high-school graduates, according to Toops.²⁷ A statewide intelligence testing program showed half of the high-school graduates were above 40-percentile intelligence, measured by norms based on freshmen students tested in fifty or more Ohio colleges. Since Ohio has some 48,000 high-school graduates each year, this means that 24,000 of them are above college 40-percentile intelligence. This number is sufficient to fill the classrooms of Ohio's colleges twice over if all of them went to college. Few states have more higher institutions of learning than does Ohio. Yet half of its best talent does not enter college. Factors, unrelated to capacity, apparently determine which youths shall attend college and are responsible for tremendous waste in human resources of the highest caliber.

Somewhat similar findings are reported in a follow-up study of approximately one thousand pupils graduating from Texas high schools in 1937. It shows that:

"... ability is only one of various selective factors which determine whether high school graduates will continue their education in college. Those who do enroll in college represent the whole range of ability among high-school graduates, and many who do not enroll are among those of greatest intellectual promise. Lack of finance seems to be the selective factor in keeping many of the most gifted from continuing their education."²⁸

All available investigations indicate that many youths of superior capacity are now prevented from obtaining the advanced schooling necessary to capitalize their talents. This does not mean that those who fail to complete high school and to enter college are equal as a group to those who do. Studies of the intellectual ability of high-school

²⁷ Toops, H. A. "Tests and Techniques." *Occupations* 12: 20-24; April 1934.

²⁸ Manuel, Herschel T. "Ability of High School Seniors in Relation to College Attendance." Texas Commission on Coordination of Education. *Research Bulletin* 7: 39; 1938.

drop-outs as compared with those continuing in attendance show that, in general, the latter are superior. However, as a group, those who drop out because of economic necessity rank higher in ability than those leaving because of inability to succeed or because of lack of interest. It is none the less true, however, that many of those eliminated, particularly at the end of high school, have first-rate capacity. It should be remembered that more than 60 percent of youths do not graduate from high school and that only about one out of every four high-school graduates enters a college or university. Nearly 90 percent leave school before reaching the college level. Even though only a minor fraction eliminated from school have superior ability, the total number with such ability is large. This situation constitutes a major waste of our most valuable resource.

*Student Aid from Private Sources
Keeps Many Youths in School.*

The plight of the student of unusual ability and diligence, whose school attendance is about to terminate because of lack of family finances, has long made a strong appeal to public-spirited groups as well as individuals. A study of student aid in secondary schools revealed that the agencies most frequently assisting are: charity organizations, women's clubs, men's service clubs, parent-teacher associations, and community chests.²⁹ Labor groups, churches, and religious organizations also share in this work.

Many of these agencies along with others, such as high-school and college alumni groups, provide scholarships at the college level. According to the United States Office of Education, there were 66,700 scholarships with funds totaling \$8,900,000 and 5800 fellowships amounting to \$2,577,

²⁹ Carley, Verna A. *Student Aid in the Secondary Schools of the United States*. New York: Bureau of Publications, Teachers College, Columbia University, 1933. 118 p.

000, available at institutions of higher education in the United States in 1934-35.³⁰ While a large number of these scholarships and fellowships were supplied from public funds, many came from grants made by private groups and individual benefactors.

Student aid from private sources should be continued and greatly extended. Funds from private sources, however, will probably never fully meet the student aid problem. Only a broad attack, through a program of effectively free education such as this report proposes, can prevent enormous losses resulting from undeveloped talents of poor youths with large native capacity.

*Selected Students from Low Income Families
Make Superior College Records.*

In 1935-36 information was collected from 270 colleges in 31 states as to the scholastic standing of NYA students. One hundred and sixty-eight institutions reported that, on the average, these students made higher grades than did the rest of the student body; 71 reported that there was no essential difference, and 31 reported that on the average, NYA students made lower grades.³¹ Had these latter institutions been more careful in the students selected to receive aid, the record of scholastic accomplishment would probably have been higher.

The Selections Committee at Ohio State University did such a careful job in choosing its 1936-37 quota of 1252 students that intellectually they constituted a highly selected group. Cowley³² reports that almost 36 percent ranked above the 90th percentile in intelligence. All but

³⁰ Ratcliffe, Ella B. *Scholarships and Fellowships Available at Institutions of Higher Education*. U. S. Office of Education, Bulletin 1936, No. 10. Washington, D. C.: Government Printing Office, 1936. p. 7.

³¹ Lindley, Betty and Ernest K. *Op. cit.*, p. 169.

³² Cowley, W. H. *A Study of NYA Projects at Ohio State University*. Washington, D. C.: Government Printing Office, 147 p.

10.5 percent of these NYA youth made scholarship grades above the average of students who graduate from Ohio State University. This, in spite of the fact that 34 percent of this group found it necessary in order to remain in college to work for additional money besides that received from their NYA work. About one in five also had dependents.

Thirty-five percent of NYA students attending the University of Minnesota during 1935-36 came from the top 10 percent of their high-school graduating class and 92 percent came from the upper half. It is not surprising that this group excelled all others in scholarship rating and honors during the freshman year at the University.⁸³ Similar superior ability among NYA students was clearly shown by studies made at other universities.

Data on the caliber of holders of scholarships show results similar to those of studies made of NYA-aided secondary-school and college students. For example, a study of the achievement of scholarship holders in the class of 1932 in 37 Pennsylvania colleges shows that as a group they were superior both in intelligence and achievement to the statewide average at graduation from high school, at the end of the sophomore year in college, and at the completion of the college course.⁸⁴

Conant, who argues that the present "accidental interplay of social and economic forces" does not result in the selection of those best qualified for college, has encouraged Harvard University to provide an increasing number of national scholarships for promising and needy youths. He reports that most of the Harvard scholarship winners of the past "have become high-ranking students in college and prominent in extra-curricular activities; they have gone

⁸³ Lindley, Betty and Ernest K. *Op. cit.*, p. 171.

⁸⁴ Miller, S. D. L. *Study of the Achievement of Scholarship Holders in the Class of 1932 in Pennsylvania Colleges*. Thesis. Philadelphia: Temple University, 1935. 69 p.

out to become outstanding men in the world of affairs and in teaching and research.”³⁵

President Conant further reports that those of the Harvard staff “engaged actively in the selection of scholarship holders who have traveled in the different states interviewing applicants, have been impressed with the large number of able youths throughout many sections of this country whose financial resources are too scanty to allow them to proceed with a first-class education.”³⁶

Data from numerous sources unite in showing that there are many children from low income families who can and will make superior college records if they get the chance to do so. The superior caliber of these students is emphasized by the fact that they come from homes in which low income often precludes the inspiration and materials of intellectual life. One economist has appraised this factor thus:

“Environmental influences are scarcely calculated, in the low-wage groups, to spur one on to great deeds. The son of a manual laborer, though he has in him the making of a skilled electrician, a great lawyer, or a merchant prince, is unlikely to receive encouragement from his immediate family and associates, to set forth upon one of these careers. Indeed, it is probable that he will never learn of his inborn capacity for greater economic achievement; that he will promptly get used to the standard of living of his father’s wage class, and that, when he reaches man’s estate, he will accept a job at ‘good wages’ and continue to hold this job, or a similar one, throughout his working life. There is no way of knowing how much human talent goes to waste from lack of discovery or development, but there can be little doubt that the losses of this kind are enormous.”³⁷

³⁵ Conant, James B. “The Harvard Prize Fellowships.” *School and Society* 39: 639; May 19, 1934.

³⁶ Conant, James B. “The Selective Process in Education.” *School and Society* 47:158; January 1938.

³⁷ Gemmill, Paul Fleming. *The Economics of American Business*. New York: Harper and Brothers, 1930. p. 434.

Accidents of Geography Condition Educational Opportunity.

It is a well-established fact that educational opportunity varies tremendously, both in amount and quality, from one part of the country to another. These differences do not arise out of a considered policy which judges that children in the South cannot acquire or do not deserve a complete educational opportunity. We are not at the moment concerned with fixing responsibility or with tracing causes. Suffice it to say that this educational underprivilege is one result of a complex array of economic and social forces. It does not appear, however, that the distribution of educational opportunity according to accidents of geography promises to maximize the economic effects of education.

The disparities in educational provision which exist in metropolitan areas are often large. The working classes live within the city limits, while well-to-do owners, professional men, and company officials live in surrounding residential suburbs. The city is thus faced with a disproportionate number of children to taxpaying capacity. The result is often limited educational opportunity where any national appraisal of needs would urge the opposite.

Rural or Urban Residence Determines the Level of Educational Opportunity.

In urban areas in 1931-32 one child in four attended high schools, while in rural areas only one in seven of the school population was in high school. It seems reasonable that this disparity in opportunity rests on other causes than native ability or interest.³⁸

³⁸ Watson, Goodwin. *Human Resources*. Washington, D. C.: American Council on Education, 1936. p. 55-58.

Farm youth so far as education is concerned, is usually at a great disadvantage as compared with village youth.³⁹ This is illustrated by a Wisconsin study which reveals that "70 farm young men per 100 did not enter high school, while 70 village young men did," and "that twice as many farm youth per 100 as village youth leave high school before graduation."⁴⁰ Rainey after reviewing a series of studies made for the American Youth Commission concludes: "A low educational level and rural poverty go hand in hand."⁴¹

After an extensive study of the educational handicaps suffered by rural youths in New York State, Eckert and Marshall conclude that "apparently little provision has been made for country boys and girls to acquire the skills and knowledge that must determine their daily effectiveness as workers and as citizens in a democracy."⁴²

The Factor of Race Significantly Conditions Educational Opportunity.

Great progress has been made in the education of the Negro population since the time when it was a misdemeanor in some states to educate a Negro slave. Nevertheless, serious denial of educational opportunity still exists. The eighteen states maintaining separate Negro schools reported in the last census that white children on the average were receiving 10.6 grades of schooling, while Negro children on the average were receiving 7.1 grades of schooling. This disparity is accentuated by the fact that all sta-

³⁹ Melvin, Bruce L., and Smith, Elna N. *Rural Youth: Their Situation and Prospects*. Works Progress Administration, Division of Social Research, Research Monograph XV. Chapter III. Washington, D. C.: Government Printing Office, 1938.

⁴⁰ James, J. A., and Kolb, J. H. *Wisconsin Rural Youth, Education and Opportunity*. Bulletin, 437. Madison: Agricultural Experiment Station, University of Wisconsin, 1936. p. 6-7.

⁴¹ Rainey, Homer P., and others. *How Fare American Youth?* New York: D. Appleton-Century Co., 1937. p. 110.

⁴² Eckert, Ruth, and Marshall, Thomas O. *Op. cit.*, p. 185.

tistics on this matter indicate that length of school term, average attendance, teachers' qualifications, type of school buildings, and other facilities are much less adequate where Negro schools are concerned. Expenditure per Negro child is often a minor fraction of that per white child in the South, despite the fact that expenditures for the latter are less than half the national average.

Dollard's study of a southern community has carefully analyzed how literacy and vocational training tend to advance the social and economic status of the Negro, and how lack of schooling and inferior opportunities tend to restrict advancement.⁴³

Negro youths in rural areas are especially handicapped by lack of high schools.⁴⁴ In the early thirties, the United States Office of Education estimated that at least 900,000 Negro youths of high-school age were not in school. In two southern states less than 5 percent of the Negro population of high-school age are enrolled in school, and in five the percent is less than 10.⁴⁵

The National Advisory Committee, after appraising the situation, concluded:

"Because of the intimate economic relations that necessarily exist between the two races, the low level of education among Negroes is a severe burden not only on themselves but on all who must employ them or have dealings with them. Even in Northern States, the large influx of Negroes from the South makes the quality of their previous training a matter of vital importance to the localities where they live and work."⁴⁶

The Negro has demonstrated his capacity to profit from educational opportunity. In spite of handicaps, a period of

⁴³ Dollard, John. *Caste and Class in a Southern Town*. New Haven, Conn.: Yale University Press, 1937. p. 199-200.

⁴⁴ Caliver, Ambrose. *Availability of Education to Negroes in Rural Communities*. U. S. Office of Education. Bulletin, 1935, No. 12. Washington, D. C.: Government Printing Office, 1936.

⁴⁵ Melvin, Bruce L., and Smith, Elma N. *Op. cit.*, p. 43-44.

⁴⁶ Advisory Committee on Education. *Op. cit.*, p. 11.

three generations has seen the members of this race change from 80 percent illiterate to better than 80 percent literate. It is still doubtless true, however, as Booker T. Washington observed, that it is "too great a compliment to attribute to the Negro child the ability to gain equal education for one dollar to every seven spent on the education of the white child."

*Fortuitous Distribution of Educational Opportunity
Has Disastrous Economic Effects.*

The evidence clearly reveals that fortuitous factors to a large extent determine whether a child shall have generous or little educational opportunity in the United States today. A child's chance to prepare for a high calling, or for any calling except unskilled labor, often rests upon such factors as the character of the soil as determined by a glacier in the ice age; whether his father is a professional man or a laborer; whether he is born in the North or in the South, in the city or the country, in an urban or a suburban community; or whether his skin is black or white. Large numbers of youths are prevented from continuing their education through high school and into college, because of lack of ability to meet expenditures required. Many of these youths have superior ability. When these superior youths are given financial aid permitting them to continue their education, they make superior records.

The distribution of educational opportunity in the nation today is such that the potential economic effects of education are far from being fully realized. Tens of thousands of youths each year are foolishly being thrown into the overcrowded ranks of casual and unskilled labor who could have qualified for callings which demand more and pay more. They have both the capacity and the ambition to so qualify. But we permit fortuitous forces beyond their control to sentence them to thirty or forty years of low-

grade and low-paid service. The youths thus condemned by an uneconomic social policy will earn less than they could have earned, and the nation's income will be less than it might have been. Wise public policy urges that this undemocratic and uneconomic situation be corrected as rapidly as possible through the right kind of effectively free education.



VII.

EXTENSION OF FACILITIES AND SELECTION OF STUDENTS

A high degree of social mobility is the essence of the American ideal. . . . The perpetual disintegration of hard and fast class lines would seem to me the first aim of an educational system. . . .

—JAMES BRYANT CONANT.

The preceding chapter described fortuitous factors which determine the amount of schooling provided children and youths in the United States today. The present distribution of educational opportunity is such that the potential economic effects of education tend to be greatly reduced. Education will not yield maximum economic returns until existing fortuitous and uneconomic bases for selecting youths for educational opportunities beyond the universal minimum are replaced by a program for making education effectively free.

The development of such a program will require the solution of several major problems. Decisions must be made as to types of facilities to be offered at advanced levels.

Methods, which are sound from an economic as well as other points of view, must be developed for selecting those to receive advanced educational opportunity. A program of student aid must be devised which will enable qualified but financially handicapped students to obtain appropriate training. Careful planning and much experience will be necessary before it will be possible to develop specific means whereby these problems may be met. Some guiding principles and practices, however, are beginning to emerge. These will be dealt with in this chapter.

Certain other problems involved in the program proposed in this report, such as its cost and financing, necessary administrative reorganizations in education, and the securing of public understanding and support, will be dealt with in subsequent chapters.

Social and Economic Needs Should Guide Extension of Educational Facilities.

The development of free education beyond the universal minimum, considered solely from an economic point of view, should be so planned that the greatest possible increase in production will be obtained from each extension. As a general policy, therefore, facilities should first be provided so that workers may obtain training for those occupations in which they will be able to produce the largest returns for themselves and for society. The satisfaction of this principle presupposes knowledge of areas of greatest productivity. Occupational surveys of each community and region must be kept continuously up to date. Such surveys should show exactly the points where the greatest productivity may be obtained, and consequently, the fields in which training should first be offered. Training facilities for callings already over-supplied, where wages are low and unemployment is frequent, would not be developed.

The areas selected for the first extensions of free training

should satisfy a second selective criterion: free education should be extended first for those fields in which an increased output will be of the greatest social importance.

The application of these criteria will lead first to extensions which will greatly increase the number receiving training for the upper levels of the trades and technical occupations, and for the semi-professional and professional fields. These increases should be continued until there are but few workers left in the unskilled branches of these occupations. Extension will follow in the professional fields and all others requiring greater amounts of training.

Accordingly, colleges and other agencies concerned with the development of facilities for occupational training beyond the universal minimum should give preference to vocations in which those trained will be able to earn the largest incomes and to fields where increased output will be of greatest social importance.

Bases for Selecting Youths for Advanced Training Should Be Improved.

Whatever may be the causes, whether of heredity or environment, it seems clear that by the time youths have completed the universal minimum they profoundly differ from one another. One may be able to deal with highly abstract questions; another experiences great difficulty in learning except from tangible and concrete situations. One may be largely endowed in imaginative power; another seems to lack such ability. One may have excellent muscular coordination, strength, and agility; another may be clumsy and weak. One may show special aptitude for getting along with other people and special pleasure in personal contacts; another may lack these qualities and may do his best work alone.

To pretend that every youth is equally capable of profiting from the same amount and kind of education is to re-

fuse to face the most obvious of facts. There are a few persons who are capable of taking advantage of the most comprehensive educational opportunities. Gifted youths are the future scientists, philosophers, statesmen, and leaders in other areas. By offering them unlimited educational opportunities society will reap a rich economic reward. However elaborate the process and however great the expense of educating them, it will be infinitesimal in comparison to the return they will yield.

A democratic school system will not treat all students alike. The difficulty with present practice, from the economic point of view, is not that different persons are given different amounts and kinds of education. It is proper that different amounts and kinds of education should be given to different individuals. The real source of the difficulty lies in the fact that our educational opportunities are not closely enough correlated with individual abilities and social needs. We are making it possible for some persons of limited intellectual endowments to waste their own time and that of others in the pursuit of unsuitable advanced education, while at the same time some persons of great potential abilities are given only meager educational opportunity. This maldistribution applies both to amount and kind of education given.

The economic importance of training an adequate supply of leaders was dealt with in the chapter on the relation of education to productivity. It is pertinent here, however, to have one well-known economist's appraisal of the significance of this function:

"Education should aim to supply the kind of ability which society needs. . . . He who can devise educational systems and educational methods which will increase noticeably the kind of talent of which there is a felt scarcity, and diminish the kind of talent of which there is a felt superabundance, is one of the greatest conservers of human energy that any country can possess. . . . Generally speak-

ing, his work consists primarily in training men for skilled work who would otherwise be compelled to do unskilled work; for mental work who would otherwise be compelled to do physical work; for work requiring judgment and discretion men who would otherwise be compelled to do routine work; for work requiring courage and initiative men who would otherwise be compelled to work under direction. The reason for this is not that these so-called higher kinds of work are inherently superior to the others—it is simply because the supply of laborers in these so-called higher occupations is scarcer relatively to the need for them.”¹

Choice of occupation should not depend, so largely as at present, upon family, economic status, neighborhood, the part of the country in which one happens to be born and grow up, and other irrelevant factors. As a result of this situation there are persons occupying positions for which they are not well fitted by their abilities, and there are other persons filling positions of less responsibility than those which their natural endowments fit them to occupy. Society is a loser in both instances. The better placement of individuals would result from a more intelligent selection of youths for advanced training. Certain principles should guide this difficult process.

Individual Ability Should Guide Selection for Advanced Training.

In selecting students for free education beyond the minimum, individual capacity and diligence should be predominant considerations. The objective should be to admit youths to advanced technical or professional training only when it appears that they can fully meet the rigorous requirements of the callings involved. Bases of judgment here should be broad rather than narrow. No mere facility in memorizing and docilely adjusting to academic routine

¹ Carver, Thomas Nixon. *The Economy of Human Energy*. New York: Macmillan Co., 1924. p. 170-172.

will suffice. In addition to first-rate intellectual capacity those selected should possess physical qualifications, diligence, social purpose and character, and other personal qualities appropriate to the responsibilities they must bear and the public-spirited service which society should expect from them.

The fulfillment of this function will require continued development and perfection of methods and techniques of selection. There is already evidence that youths of real ability can be identified before they enter college. Closer and more intelligent cooperation between high schools and colleges, and the further development of selective methods should make possible the practical administration of a program in which individual ability is the basis of selection for advanced education.

*Advanced Training for Qualified Youths
Must Be Made Effectively Free.*

Many competent youths are now debarred for financial reasons from obtaining training which they are qualified to undertake. This must be corrected in order to maximize the economic effects of education. The goal must be a situation where no one will be denied training due solely to lack of money to pay for it. The implementation of this policy involves a series of problems and decisions.

We now provide free tuition in the elementary and secondary levels of education. This is a wise policy but it does not go far enough. Effectively free schooling requires more than free tuition—it is schooling provided under such conditions that persons who should have the schooling are not debarred from it by financial reasons. This means that the cost of books, educational supplies, and maintenance will be provided in part or in whole if the lack of such provision keeps qualified youths from attending school solely due to financial limitations.

This is necessary if the universal compulsory minimum of ten years of schooling is to be put into action. It applies to an even greater degree if the median schooling of American youth is to be raised to fourteen years and if personal financial limitations are not to bar youths of superior capacity from continuing beyond this average. The problem involved is clearly stated by the Advisory Committee:

“Even though tuition may be free, attendance at high school is expensive to the pupils and their families. The higher up the educational ladder young people progress, the larger become the costs that are not ordinarily met through public funds. The financial status of families and of individuals is thus one of the most important factors in determining whether a young person shall remain in high school to the completion of the course, and is usually decisive when college attendance is under consideration. In consequence, additional provision for education free of tuition costs to the individual will not greatly reduce inequalities of opportunity for secondary and higher education if there is not also some provision to make attendance possible.”²

The question arises as to whether advanced training is to be free for all qualified youths, or merely for those unable to pay for it themselves. Some will probably argue that all costs of advanced training should be provided qualified students, irrespective of whether they are rich or poor. In support of this position, they might argue that it is undesirable to determine whether education shall be free or not according to the criterion of economic class. This basis was rejected nearly a century ago at the elementary-school level. The stigma attached to those attending “pauper schools” had to be removed in order that schools appropriate to a democracy might evolve.

It is possible that the course of social evolution will eventually result in making advanced education free to all qualified youths, regardless of their economic status. De-

² Advisory Committee on Education. *Report of the Committee*. Washington, D. C.: Government Printing Office, 1938. p. 100.

cision on this matter, however, can wait. At this time the objective should be to make education effectively free as the term has been defined in this report. This will be a major undertaking since, as was shown in a previous chapter, there are large numbers who are intellectually but not financially qualified to continue their schooling beyond present levels. Accordingly, the cost of financing effectively free education will require that the amount of aid received by students should vary according to their needs. It should be practical to determine the annual amount required to finance advanced study in a given situation. The proportion of this amount which it is feasible for students to obtain themselves or from their families, taking account of income, could be estimated. The difference should be made available. This will make education effectively free and will permit society to reap the economic returns promised by such a policy. Furthermore, such experience as has been gained to date suggests that it is possible to give financial aid at the higher education level without stigmatizing those accepting it. Extending student aid in such a manner as to involve stigma or loss of self-respect should not be tolerated.

*Student Aid Should Imply
Honor and Responsibility.*

The program for aiding worthy and needy students should involve no loss in self-respect. The provision of aid should imply that the recipient is recognized as possessing superior mentality, character, and other personal characteristics which make his training an excellent social and economic investment. He should be made to feel that acceptance of aid is equivalent to contracting a debt which can be amortized only by rendering substantial returns in service to society. Sober responsibility, rather than snobbish superiority, should characterize those selected to receive student aid.

It may be argued that society should trust no neophyte with the two-edged sword of an advanced technical or professional education who does not possess these knightly qualities. The point is a good one. This element is recognized as important in the training of some technical and professional workers. Witness the Hippocratic Oath taken by the young physician.

Here we are concerned with the fundamental question as to whether conditions under which many professional and technical men now secure their preparation are such as to inspire the highest social purpose. This preparation usually involves extensive personal outlays.

If the student concerned comes from a family in relatively good economic circumstances, he is likely to look upon the payment of the cost of his advanced education as a matter of course, particularly if economic advantage has been enjoyed by his family for more than a generation. At any rate, even though a portion of his tuition is financed from endowment, he is likely to look upon his training as pretty much of a private affair. It is a personal investment on which he is privileged to recover principal and interest according to the standards of competitive business.

If the student concerned comes from a poor family he achieves advanced training only after tremendous personal effort and sacrifice. Often his course may be completed only after endangering his health and incurring substantial debt. The situation here is one which even more encourages the person completing extensive technical or professional training to look upon it as a means first to private profit, and incidentally—if at all—as an obligation for public service.

This whole situation emphasizes the need for careful thinking as to how an attitude of social responsibility may be created as an outcome of advanced education. This is

important at all levels and irrespective of how the student's training is financed. It is peculiarly important in an economy which places such unprecedented power in the hands of leaders. It seems sound to grant aid to students only under circumstances which carry honor rather than stigma and emphasize social obligation.

*Present Forms of Student Aid Need
Extension and Appraisal.*

Persons who might be prevented from securing the minimum amount of education deemed desirable for American citizenship, or from pursuing the advanced education for which their abilities and interests qualify them, should be given aid which will make it possible to secure the proper amount of education. Provision should be made not only for tuition, but also other costs of continued education, including maintenance when necessary. It is too early to be certain as to the forms this aid should take.

This aid may be furnished in the form of scholarships. All institutions of higher education should increase the number of scholarships as rapidly as conditions permit. Wealthy donors, in many cases, might better give funds for the endowment of scholarships than for the erection of buildings. A substantial increase in such benefactions would greatly help in developing this form of student aid. This has been the principal source of scholarships in non-tax-supported institutions and has also been a source of aid for many students attending public institutions. It would also be highly desirable to increase the number of scholarships at every state university or college, financed at public expense. A special development of the scholarship plan exists in New York State. Since 1913 this state has financed three thousand \$100 scholarships. These are available on a competitive basis for high-school graduates wishing to attend college. The recent Regents' Inquiry recommended

that the number of scholarships be raised to six thousand and that the stipend be increased to not to exceed \$300. It was recommended that a plan be initiated whereby those awarded a state scholarship, who did not need the full \$300, should receive such part as the commissioner of education determines. The idea was that this plan would enhance the prestige of the scholarships and would reduce the total cost to the state. There was also a recommendation that local school authorities be authorized to finance competitive scholarships for not more than 5 percent of the graduating class to be awarded by the state commissioner of education. It was also proposed that one hundred graduate fellowships of \$400 each be made available for graduate, academic, scientific, and professional study, to be awarded by the commissioner of education.³

Student loans have been widely employed as a means of financing advanced schooling. Loans to selected students at moderate interest rates have proved good financial risks. The extension of this form of student help is desirable in the present situation.

The partial subsidizing of the costs of education has long been a practice in many private and public institutions. Tuition fees in the former are often less than cost, the difference being met from endowment. Unfortunate reversal of this situation is threatened by the trend as to tuition charges. Between 1925 and 1935 the portion of current expenses met by student fees in publicly controlled institutions of higher learning increased 2.7 percent and that in privately controlled, 2.5 percent.⁴ Many institutions partially subsidize student maintenance by providing it at less than cost.

³ Gulick, Luther H. *Education for American Life*. Report of the Regents' Inquiry. New York: McGraw-Hill Book Co., 1938. p. 59-60.

⁴ Badger, Henry G; Kelly, Frederick J; and Greenleaf, Walter J. *Abridged Statistics of Higher Education, 1935-36*. U. S. Office of Education, Bulletin 1937, No. 2. Washington, D. C.: Government Printing Office, 1938. p. 20.

Such methods of aiding students should be extended until all those qualified for advanced training are provided for. Constant appraisal of the forms of aid given should eventually permit the perfection of a system which will allow society to capitalize all of its human resources.

*Conditions for Granting Student Aid
Require Careful Thought.*

Opinions differ as to what conditions or requirements should be involved in providing student aid. Is it desirable that the student should directly repay the cost of his education in part or in whole to the agency helping him? From the economic point of view, the first consideration is that the financial barriers to training be removed in order that all human talent be fully capitalized. When this is provided for, the economic effects of education are maximized. Accordingly it would be logical that the maintenance grants should be outright allotments and should be regarded neither as charity nor as payment for services currently rendered. They would be, rather, the means by which society maintains and increases its economic productivity.

Certainly maintenance grants should not involve an amount and kind of work which hinders the student from fully capitalizing the educational opportunities offered. President Conant has dealt with this matter as follows:

"At present it is extremely difficult for a student to work his way through college. It seems to me a mistake to make a young man of intellectual promise spend long hours doing non-intellectual tasks to help himself through college. It taxes . . . his physical strength and may break his morale. It is a social waste."⁵

This does not mean that work should be excluded from the lives of college students. Work in the form of serious

⁵ Conant, James B. "The Harvard Prize Fellowships." *School and Society* 39:639; May 19, 1934.

intellectual endeavor is necessary, if their training is to have economic value. The educational process itself is, or should be, a socially useful form of work. This process indeed might very appropriately consist, in part, of work of remunerative character but it should be work in which learning rather than earning receives the center of emphasis. It is doubtless true that higher education for many youths today does not involve sufficient substantial work. It seems unlikely that superior occupational training can result from a situation in which youths are too much insulated from contact with what is involved in earning an honest dollar in the open labor market. The experience certain pioneer institutions are gaining today in making higher education a process of many direct connections with real life and real work needs to be attentively studied. There should be more effective use of the summer vacation period as a time of practical work related to the student's probable future vocation. The primary objective, however, should be kept clearly in mind, namely, that the training of youths should be such that they will be most fully prepared to meet the exacting requirements of our complex economy.

The foregoing discussion has dealt with policies which should govern the granting of student aid to youths of superior ability. Under existing practices, however, considerable sums are used in financing the education of youths who do not possess such ability. This happens whenever any part of the tuition and other costs to a college due to the attendance of unqualified youths is met from public funds or endowments. The families of some youths, who do not possess the capacity, diligence, character, and other qualities which should be prerequisite to college admission, insist that they be admitted. In some instances these youths come from families of low economic status, who have little conception of the qualifications requisite to college success. In other instances, they come from fam-

ilies of high social and economic status and influence. What should be the policy in regard to such youths? Some urge that they be excluded since their presence tends to lower college standards. This, in fact, is the policy of certain colleges. There are others which will admit these students. In such instances it seems clear, however, that the total cost to the college including tuition as well as all other expenses should be met wholly by the families concerned.

*Effectively Free Education Would Tend
To Raise College Standards.*

Making education effectively free for youths of superior ability would not lower college and university standards. Institutions of higher learning could select those admitted from all rather than from a fraction of high-school graduates. If the methods of selection were in accord with principles outlined in the next chapter, the effect would be to secure student bodies of high caliber. Social and economic status would play a less important role in determining admission to college, while ability, diligence, character, scholastic record, and similar factors would play more important roles. If at the same time, appropriate opportunities could be developed by technical schools, business, labor, and other appropriate agencies for those whom it appears would not benefit from attending colleges and universities, the latter institutions would be relieved of a pressure which now tends to lower their standards. The total result would be better differentiation of post high-school education and the general improvement of standards at this level.

The providing of appropriate educational opportunities at the post secondary-school level, however, is partly the responsibility of existing colleges and universities. One of the reasons why standards of effort and accomplishment of college students of even superior ability are often not high is the narrow curriculum and uninspired teaching

which too often exists. Traditional courses which take too little account either of individual interests or social need should be replaced by those which hold greater challenge and value.

*Proper Occupational Distribution
Need Not Involve Regimentation.*

Maintenance grants to superior students should not be conditioned upon the recipient's agreeing to prepare for, to enter upon, or to refrain from entering, particular vocations. Authoritarian control over vocational distribution should not be exercised through the manipulation of maintenance grants. Such guidance as is appropriate to a democratic society may be achieved better through other means. This general policy, however, should not be interpreted as precluding the desirability of establishing scholarships and other financial aids for students admitted to particular professional schools.

Better occupational distribution is a matter of major concern. It determines in large measure both the quality of individual living and the successful operation of the national economy. The following statements made by special investigators for the Regents' Inquiry and the President's Advisory Committee are pertinent:

"Our human resources will be conserved to their fullest and used most effectively when each individual is so placed that he can make his maximum possible contribution to the social good consistent with his own individual happiness and welfare. It is not enough that he give his utmost; he should also be doing that work which will result in the fullest richness of his own life. For everyone to make the correct choice is probably only an ideal, but at least it establishes our goal, and any step in that direction is an advance for the individual and for society."⁶

⁶ Norton, Thomas L. *Public Education and Economic Trends*. Cambridge: Graduate School of Education, Harvard University, 1939. p. 25.

"For those who earn their livelihood by work of hand or head, the job is an important consideration. It is one's daily tasks that give life its tone and color; both for the worker and his family many of the satisfactions of life grow out of the attractiveness of his occupation. Furthermore, the orderly operation of the economic system requires, among other factors, a balanced distribution of workers in the various occupational groups. It is enormously important, both from the individual and the social point of view, that the right persons with the proper training be appropriately distributed among the various occupations. Herein lies one of the major social obligations of the American educational system."⁷

This obligation need not involve a series of regimented controls. Rather, it should be achieved through educational methods which are more consistent with a democratic society. This will greatly increase the need for guidance and advisory services in the schools, especially at the point where the proposed universal minimum of education terminates. It will be necessary also to develop ways and means of compiling information on the supply and demand for workers in all vocations, the requirements for success in each of the vocations, the standards enforced, and the opening up of new occupations. These facts should be widely disseminated and should be made the basis of occupational instruction in the schools. Equipped with such information, each person would know the probabilities of success in any particular vocation, the financial rewards to be expected, and the standards for admission. Given this information, he would be a free agent with respect to vocational choice but he would be both informed and free rather than, as is often the case at present, free and ignorant. The use of facts, advice, and intelligence in shaping one's occupational career should be made a part of the

⁷ Edwards, Newton. "Social Development and Education." *The Problems of a Changing Population*. National Resources Committee. Washington, D. C.: Government Printing Office, 1938. p. 213.

mores of the people, replacing present uninformed, happenstance procedures. This matter was dealt with as follows by the National Resources Committee:

“Any well-planned program that looks toward a more adequate adjustment of population to occupational opportunity must be based on careful and detailed analysis of occupational trends and of the changing demands that the various occupations are making upon the skill, the intelligence, and the social qualities of the worker. Such an analysis has yet to be made.”⁸

A population with adequate facts and advice will not have to be regimented into a proper occupational distribution. Enlightened self-interest may be trusted to cause informed citizens to avoid overcrowded, and to prepare for under-supplied, callings where wages and other conditions of work are attractive.

*Careful Selection and Student Aid
Would Raise Occupational Standards.*

The program proposed in this chapter does not contemplate the lowering of standards of admission to any of the trades or professions, nor the lowering of standards for admission to the schools which give professional or other occupational training. All standards of capacity, interest, health, character, and the like, which can be shown to have a valid connection with success in serving the public in a particular occupation, should be maintained at the highest possible level. Such standards are of peculiar importance in advanced callings; they need not and should not be relaxed. They will exert a wholesome selective influence upon those who enter or prepare to enter each of the vocations. The difference between what is here proposed and what now exists is that genuine standards would be possible for admission to advanced callings, in place of the accidental and

⁸ *Ibid.*, p. 213.

mediocre selections which now too frequently occur. A carefully developed program of student aid, along the lines projected, would make it possible for those who can meet the rigorous selective process proposed to continue their training, instead of leaving school to enter semi-skilled or unskilled callings as happens too often under existing policies. Colleges and other agencies would be able to select students whose secondary-school experience promises that they can profit richly from continued training regardless of the economic or social group to which they belong.

If ability, diligence, and character were the bases of selecting youths for advanced training, and if all who can meet the standards required are placed in a financial position to continue, student bodies would be made up of the best from all sections of society. The total effect should be to raise rather than lower the standards required for admission to advanced training. Untold social, as well as economic, advantage might be expected to accrue to our democratic society from such a situation.



VIII.

ESTIMATING THE COST

It is not so much the amount of taxes and public expenditure that should command attention as the purposes which public funds serve and the circumstances surrounding their disposition, that is, whether the object of the expenditure is wise and whether the function has been properly conceived and is being efficiently and economically administered in the interest of the community as a whole.

—NATIONAL INDUSTRIAL CONFERENCE BOARD.

Preceding chapters have shown that education plays an important economic role in our complex industrial culture. A program has been outlined concerning the kind and amount of education which would further increase the positive economic effects of education. It is concluded that the cost of this program would pay for itself in the long run—that after it had been paid for there would be more left with which to buy other things than there would have been otherwise. This chapter deals with the more immediate

financial problem. It presents an approximate estimate of the amount required annually to finance the proposed program.

For the purpose of estimating costs, the program proposed in this volume may be divided into:

1. Financing the proposed ten-year minimum of schooling.
2. Carrying the median person through fourteen years of schooling.
3. Additional cost of providing free textbooks, school supplies, school fees, and other "educational necessities."
4. Additional costs in certain cases for clothing and necessities of life which would enable all children to remain in school for ten years and the median youth to remain for fourteen years.
5. Lifting the poorest schools to a reasonable minimum of efficiency.
6. Improving and extending the program of education in other respects, including carrying qualified persons through education beyond fourteen years, providing vocational retraining and other desirable forms of adult education, and additional improvements.

Estimates of Future Costs Are Difficult.

Exact predictions of cost for the above items would require extensive data which are now lacking. Furthermore, future social trends cannot be definitely predicted. For example, concentration of population in cities would make schooling relatively less expensive than a sparse distribution of population in rural areas. Yet it is impossible to predict accurately what the population movements in this country may be. Again, the number of children to be educated in the future will depend on birth-rates, death-rates, and immigration quotas, none of which can be positively predicted. It is desirable, however, in spite of serious difficulties, to anticipate as well as we may the needs and developments of the future, while building a better basis of statistical information upon which future planning may rest.

*The Cost of the Ten-Year Minimum
Program Is Estimated.*

In estimating the cost of the ten-year minimum program, it is assumed that elementary education will be provided for all children 6, 7, 8, 9, 10, and 11 years old, and general junior secondary education for all youths 12, 13, 14, and 15 years old. The number of children in the foregoing elementary-school ages in 1939 was estimated at 13,700,000 in the study of population trends prepared by the Scripps Foundation for the Educational Policies Commission.¹ Elementary schooling now costs approximately \$75 per child in average daily attendance.² Assuming that 90 percent³ of the elementary-school population would be attending daily, the annual cost for children aged 6 to 11 inclusive would be in round numbers \$925,000,000.

The number of youths, 12, 13, 14, and 15 years old, in the four years of the proposed junior secondary-education period is 9,700,000. The present cost of junior high-school education is approximately \$140 per child in average daily

¹ National Education Association and American Association of School Administrators, Educational Policies Commission. *The Effect of Population Changes on American Education*. Washington, D. C.: the Commission, 1938. p. 52.

² This includes current expenses and capital outlay. The cost of public elementary schools, in states where separately reported, was \$76 in 1930, and \$65 in 1936. Since costs in 1936 were rising rapidly toward pre-depression levels, \$75 is a conservative estimate for the 1939 cost. (U. S. Office of Education, *Biennial Survey of Education, 1928-30*. p. 80; *Statistics of State School Systems, 1935-36*. p. 101.)

³ Average daily attendance of 90 percent of enrollment would require better enforcement of attendance laws than at present. The average attendance has recently been about 85 percent of enrollment. More than half of the states attain this average. With improved enforcement of attendance laws, a 90 percent average attendance could be maintained. The figures on attendance are for all public day schools, elementary and secondary. No figures are available which make it possible to use different percents for the elementary and secondary levels.

attendance.⁴ Again assuming 90 percent attendance, the estimated cost of this part of the universal minimum program would be \$1,222,000,000. The elementary and junior secondary parts of the program taken together then would cost \$2,147,000,000. This estimate, as well as that for the senior secondary school, includes all children and youths and makes no differentiation between public and private school attendance, since in both cases the cost is a charge against the total national income.

*The Cost of Raising the Median Schooling
to Fourteen Years Is Estimated.*

The number of youths aged 16, 17, 18, and 19 in 1939 was approximately 9,900,000.⁵ In order to estimate costs at this point, it is necessary to make some assumption regarding the rate at which students will be eliminated from school prior to the completion of fourteen years of schooling by one-half of them. For the purpose of estimate, a uniform rate of elimination is assumed from the point at which all children complete their tenth year of schooling to the point at which one-half of all children complete their fourteenth year of schooling. This would mean that approximately 50 percent of the 19-year-olds, 62 percent of the 18-year-olds, 74 percent of the 17-year-olds, and 86 percent of the 16-year-olds would be at school.

The number enrolled would then be 1,200,000 of the 19-year-olds, 1,600,000 of the 18-year-olds, 1,900,000 of the 17-year-olds, and 2,000,000 of the 16-year-olds. For the education of the 16- and 17-year-olds, we may assume an average cost of approximately \$160 per student per

⁴ The actual cost in 1930 was \$143; in 1936, \$105. Since costs are returning to pre-depression levels, \$140 seems a conservative estimate for 1939. (U. S. Office of Education, *loc. cit.*)

⁵ National Education Association and American Association of School Administrators, Educational Policies Commission. *Op cit.* p. 52.

year,⁶ and for the 18- and 19-year-olds an average cost of \$200 per year.⁷ Allowing for 90 percent of attendance among all groups results in an estimate of \$1,066,000,000.

Added Cost of Providing Educational Necessities Can Be Estimated.

In line with the general theory proposed throughout this report, the cost of textbooks, supplies, fees, and special equipment required for school attendance would need to be financed. Expenditure from public funds for textbooks and school supplies is about \$4 per pupil in average daily attendance in city school systems where such supplies and books are furnished at public expense.⁸ The number

⁶ The cost in regular and vocational senior high schools was \$168 in 1930 and \$139 in 1936. Since costs of schooling are increasing toward pre-depression levels, \$160 per year appears to be a conservative estimate for the first two years of the senior secondary unit in 1939.

The unit costs used in these estimates are in no sense to be regarded as standards. The present difference between elementary- and secondary-school costs is due in part to the many low-cost elementary schools located in rural districts without high schools. In districts that support both elementary and high schools, a form of organization greatly to be preferred, the average unit cost in high schools is about 1.7 times that of elementary schools. Application of this ratio for 1929-30 would give unit costs of \$86, \$112, and \$146, for elementary, junior high, and senior high schools, respectively, to reach the same total costs as used in the above estimates. The trend, in practice and theory, seems to be toward a lessening of the gap between elementary- and high-school costs.

⁷ There are no nationwide figures on junior college costs. The cost of public separate junior colleges in California was \$233 per student in average daily attendance in California in 1938. This state has about one-third of all public junior college students. Other secondary-school costs in California are approximately one-third higher than the national average. It is therefore estimated that the average cost of junior colleges is in the neighborhood of \$200.

⁸ Cost for textbooks and supplies at \$4 per pupil is based upon a study by the Educational Research Service of the National Education Association. (*Schoolbooks and Supplies: Recent Trends in Expenditures and Policies*, Circular No. 2, 1934.) In 303 cities the average cost of furnishing free books and supplies for all elementary, junior and senior high-school pupils was \$4.45 in 1930-31 and \$2.97 in 1933-34. The \$4 estimate is not suggested as a desirable or standard amount.

of pupils in average daily attendance in the proposed plan would be 90 percent of 30,100,000, or 27,100,000 pupils. Perhaps two-thirds of all pupils already receive textbooks and supplies at public expense.⁹ The expense of such materials, therefore, is included in the per pupil costs used in the estimates which have already been made. Supplying these materials to the remaining one-third would cost, in round numbers, \$36,000,000.

In addition to textbooks and supplies, practically all secondary schools require pupils to have special clothing and equipment for physical education and science classes, student activities, and other items. These activities are regarded as indispensable in the complete educational program. Properly administered, their value for all students is unquestioned. They should, therefore, be provided for all. From the limited studies available covering these items it is estimated that the annual cost per pupil enrolled would be about \$5. The enrollment in the junior and senior secondary schools under the proposed plan would be 16,400,000, which at \$5 per pupil enrolled would amount to about \$82,000,000. Some of this expense, however, has already been included since a few schools now finance a part of this cost. If the part of the cost already being financed is arbitrarily placed at about 10 percent, the estimated net additional cost would be in the neighborhood of \$74,000,000. The total cost of the "educational necessities" item would be, therefore, \$110,000,000.

Certain Necessities of Life Requisite to School Attendance Must Be Provided in Some Cases.

If children from families in the lowest income brackets are to attend school, some of them must have additional clothing and other maintenance provisions. Creation of an effectively free school system will make necessary the ab-

⁹ A rough estimate based on school population in the states which have mandatory or permissive free textbook laws.

sorption of some of these costs for some children and all of them for children from families of the lowest incomes. Otherwise, such costs will serve as an effective barrier to school attendance.

If a youth is able to earn enough to defray a part or all of the expenses of attending school, without injury to his health or loss of other more valuable experiences, he should be permitted and encouraged to do so. Schools should, in fact, make it possible for every student to participate in some type of productive work.¹⁰ If, however, a youth cannot secure work, or must injure his health, or lose much of valuable school experience in order to earn money, his schooling should be financed from other sources. The proposal is for enough help with all factors considered to make education effectively free within the age limits and other conditions defined in this report.

It is probable that only a minor fraction of children of elementary-school age are out of school for financial reasons. It is difficult to estimate the relatively small amount that would be required to make elementary education effectively free in the United States. At the present time, considerable sums are spent for free lunches, clothing, and other items for needy children in Grades I-VI. These expenditures would have to be continued and extended. Perhaps \$50,000,000 would be enough to make elementary education available under conditions that would not deprive any of it for financial reasons.

It is estimated that the total number of youths aged 12 to 15 inclusive is 9,700,000. There are at present about 8,100,000 enrolled¹¹ in Grades VII-X, which correspond with the foregoing ages. This leaves 1,600,000 to be en-

¹⁰ National Education Association and American Association of School Administrators, Educational Policies Commission. *The Purposes of Education in American Democracy*. Washington, D. C.: the Commission, 1938. p. 91-93.

¹¹ Figures for public schools in 1936, increased by 8 percent for non-public schools.

rolled under a program which would provide for a minimum of ten years' compulsory schooling.¹²

It is estimated that the total number of youths aged 16 to 19 inclusive is 9,900,000. Out of this number, 6,700,000 would be enrolled under that part of the proposed program which provides for raising the median amount of schooling to fourteen years. The present enrollment in Grades XI-XIV inclusive, corresponding to the foregoing ages, is about 3,100,000.¹³ This leaves 3,600,000 to be enrolled at this level in the senior secondary school.

Not all children leave school early for economic reasons. Many other factors are involved. A few children have severely restricted intelligence. A few live in such isolated areas that education by correspondence and radio are the only practicable means of reaching them. Many more would attend school if the instruction were more practical and varied. Some leave school as soon as released by compulsory attendance laws, not because they are financially unable to attend any longer, but because the attraction of earning money outweighs the attraction of school. A survey of many studies of reasons for leaving school suggests that one-third of all now leaving do so on grounds of financial necessity. The foregoing estimates as to the additional numbers who would be in school under the proposed program total 5,200,000. If one-third of this number is not in school because of financial necessity, the total number needing assistance to stay in school would be 1,700,000.

The amount of aid necessary would vary from a very small amount in a few cases to considerable amounts for

¹² Data as to present school enrollments are from U. S. Office of Education, *Statistics of State School Systems, 1935-36*, p. 57; and *Statistics of Higher Education, 1935-36*, p. 16. Data as to number of children in different age groups are from Educational Policies Commission, *The Effect of Population Changes on American Education*, p. 52.

¹³ Estimate: 2.4 million in Grades XI and XII and postgraduate classes, plus .1 million in private schools, plus .6 million freshmen and sophomores in higher institutions and advanced technical schools.

food, clothing, medical care, and the like, in other cases. The aid given under the student aid program of the National Youth Administration has \$6 per month for a maximum in high school, and \$20 per month as a maximum for college students. In a nine-month school year the annual maximum totals would be \$54 and \$180, respectively. The actual yearly payment, for high-school and college aid combined, averaged \$78 in 1935-36 and \$72 in 1936-37. It would appear, then, that \$70 per year may be used as an estimate of the average need. This amount for 1,700,000 students would be about \$120,000,000. Adding the \$50,000,000 for elementary education yields a total of \$170,000,000 for item 4.

*The Poorest Schools Should Be Lifted to
Some Reasonable Minimum of Quality and Cost.*

The costs which have been estimated so far involve largely the provision of the present average educational program to a somewhat larger group of persons than those now in school. In addition, it is highly desirable that the quality of the program itself be improved and in many cases this improvement in quality will require additional finance. Perhaps the most critical financial problem in the schools at present, if the matter be looked at in a national way, is to remedy the extremely low level of educational opportunity which prevails in certain sections. Both equality of opportunity and economic efficiency would be promoted if these lowest levels of educational opportunity could be improved until they reached something that might be acceptable as a national minimum of educational quality.

It is estimated that the amount required to increase the expenditure of those school districts which now have extremely poor financing of education up to a level of \$60 per elementary-school pupil and correspondingly higher expenditures per high-school pupil would be about \$500,-

000,000 at the present time under the proposed program. Assuming that conditions are such that equalization up to a reasonable level is no more difficult proportionately than it was in the year 1930-31, this amount would be sufficient to remove all the worst financial conditions in schools in impoverished and poverty-stricken areas.¹⁴

*The Program of Education Should Be
Generally Improved and Extended.*

The foregoing estimates do not exhaust the possibilities for improving the effectiveness of American education. Additional education beyond the fourteen-year median should be provided for persons competent to work in the more highly skilled trades and professions. Scholarships for such purposes should be provided for any competent person if the absence of such aid would prevent that person from securing the education necessary for him to work in the occupations where he can be most productive. Vocational retraining for adults is made necessary by occupational shifts and technological changes in industry. Such retraining should be provided as a part of the program for making education contribute most fully to economic well-being. It can hardly be doubted, furthermore, that substantial

¹⁴ Mort, Paul R., and others. *Principles and Methods of Distributing Federal Aid for Education*. Advisory Committee on Education, Staff Study No. 5. Washington, D. C.: Government Printing Office, 1939. p. 19, 70. The estimate is based on the chart given on page 8 of the foregoing study. The cross-hatched portion of the chart shows the distribution of expenditures for schools in the United States. The dotted portion shows the amount required to raise the expenditure of the lowest districts to a minimum of \$48 per census unit, or \$60 per "weighted" elementary unit in the year 1930-31. In that year the total current expense of the schools, represented by the cross-hatched area, was approximately two billion dollars. The dotted area is 15 percent of the cross-hatched area, which indicates that the amount required for the purpose of improving the program in the lowest districts was \$300,000,000. The attendance load proposed in this study is about 1.3 times the load in 1930-31. This increases the \$300,000,000 to \$390,000,000. Increasing this by one-fourth to take into account capital outlay and other non-current expenses, increases the amount to practically \$500,000,000.

economic and social benefits would accrue from a more general provision of kindergarten and nursery school education than is now the case. It would be desirable to lighten the load carried by many teachers and other members of the educational profession; the employment of additional personnel for this purpose would often result in more effective schooling and hence in greater economic and social efficiency for the population as a whole. The sums spent on educational research are pitifully small when compared with the vast expenditures which private industry finds it profitable to make for experimentation. Great improvements in the economic effectiveness of education could doubtless flow from a relatively small provision for educational investigations. These are but a few of the possible further developments of education which will require additional financing as our economic, social, and educational systems move forward. No estimates of the cost of such improvements, however, are included in this chapter.

*Preceding Estimates
Are Summarized.*

To recapitulate, the annual cost for the items listed on page 174 are estimated as follows:

- | | |
|---|-----------------|
| 1. Financing the proposed ten-year minimum of schooling | \$2,147,000,000 |
| 2. Carrying the median person through fourteen years of schooling | 1,066,000,000 |
| 3. Additional cost of providing free textbooks, school supplies, school fees, and other "educational necessities" | 110,000,000 |
| 4. Additional costs in certain cases for necessities of life which would enable all children to remain in school for ten years and the median youth, for fourteen years . . . | 170,000,000 |
| 5. Lifting the poorest schools to a reasonable minimum of efficiency | 500,000,000 |
| 6. Improving and extending the program of education in other respects | No estimate |

The total of the foregoing estimates, exclusive of item 6, is just under four billion dollars. In 1938, the cost of elementary, secondary, and higher education, both publicly and privately financed, was about three billion dollars.¹⁵

*A Program of Effectively Free
Education Should Be Gradually Developed.*

The additional expenditures required to make education effectively free in the United States would not involve an immediate increase of the amount estimated above. It would require a considerable period of years to develop a program involving this additional expenditure. The assumption is that this program, along with other positive factors, would cause increases in the total national income greater than the increased costs of financing the program. The evidence supporting this assumption appears sufficiently convincing to justify the initiation of the program. The rapidity and extent to which it would be developed would depend upon increases in the national income and other factors. In proportion as the educational program here proposed, together with other measures, brings about a more satisfactory standard of living and distribution of income, the need for maintenance grants for youths would decrease. How rapidly this may occur depends on a complex array of unpredictable factors.

*Many Agencies Should Share in the Cost
of Making Education Effectively Free.*

It should be recognized that all of the foregoing costs would not be financed by taxation or paid out of the public school budget. A certain number of those included in the proposed program would attend private schools at their own expense, although the total demand of education on

¹⁵ An estimate based on: U. S. Treasury Department *Bulletin*, August 1939, p. 4; and data for 1936 from the U. S. Office of Education.

the social income would not be greatly different by virtue of this fact alone. Furthermore, it is specifically proposed that the cost of item 4, above, should not be a charge against the education budget, but should be financed as a part of the general program of public welfare and social security, to be administered in cooperation with school authorities. This accords with a previous declaration of policy by the Commission:

“That the material wants of indigent school children be supplied by agencies other than the public schools; that school authorities stimulate community action leading to the establishment of appropriate agencies for removing social, economic, or physical handicaps that affect the education of children; and that school authorities seek actively to coordinate educational services with social services rendered by other public and private agencies.”¹⁶

Increased costs, involved in making public education effectively free—other than those due to student aid and maintenance—should become a part of the regular educational budget. The financing of this increased program is discussed in the next chapter.

¹⁶ National Education Association and American Association of School Administrators, Educational Policies Commission. *Social Services and the Schools*. Washington, D. C.: the Commission, 1939. p. xi.



IX.

FINANCING THE PROGRAM

The wisdom of spending public and private funds on education is not to be measured by its direct fruits alone. It will be profitable as a mere investment.

—ALFRED MARSHALL.

Earlier chapters have outlined a program of effectively free education, which would greatly improve the productivity and economic welfare of the nation. This program would involve raising the median level of schooling to fourteen years and making it effectively free as defined in this report. It would remove financial barriers which now prevent many youths from obtaining the kind and amount of education justified by their capacity and diligence. In the long run the cost of such a program would more than pay for itself.

The financing of the program would involve additional expenditures for education to be paid through taxation. Does the present and possible future productive capacity of our economy suggest that it will be practical from an

economic point of view to raise the funds required to initiate the policy of effectively free education? What fiscal and administrative first steps are required?

Let us begin by examining the productivity of the existing economic system—the operation of which permits us to raise taxes and to have all the material products and tangible services which compose the social income, the basis of our standard of living. What is the present and probable future productivity of the existing economic system? Did it reach the maximum which may be hoped for in the decade following the World War? Should we expect a lower level of production than that realized in the 1920-1930 decade? Or may we expect a return to and rise above that level?

Present and Potential Productivity Have Been Estimated.

The foregoing questions have been the subject of investigations of three types. First, there are studies which estimate the amount of loss due to non-utilization of existing plant and equipment. Second, there are calculations of potential productivity based on the assumption that all plants can reach a standard of efficiency represented by best current practice. Third, there are estimates which assume basic improvement in economic organization and methods of production. Calculations of potential productivity based upon all three types of researches are summarized below. The studies cited are selected from a large number which arrive at substantially similar conclusions.

Existing Plant and Equipment Are Not Fully Utilized.

One of the earliest studies was conducted by the Committee on the Elimination of Waste in Industry.¹ It discov-

¹ Federated American Engineering Societies, Committee on the Elimination of Waste in Industry. *Waste in Industry*. New York: McGraw-Hill Book Co., 1921. 409 p.

ered a waste of productive capacity in six major industries ranging from 29 to 64 percent. Several other engineering surveys have found that even in the prosperous decade following the World War industry was not producing all the goods and services that it should have been able to produce with existing plant and equipment and the natural resources and labor force available.

Studies by economists concur in this conclusion. Outstanding among such investigations is the four-volume report by the Brookings Institution.² The basis of its estimate is stated as follows:

" . . . we are concerned not with the theoretical maxima of production but with practical results which could be obtained under conditions of operation with which we have had actual experience. We are not attempting to calculate productive performances that might be brought about under ideal conditions . . . In our analysis we have endeavored to arrive at capacity estimates that are obtainable under the *practical operating conditions* which exist. . . . the analysis by which we have proceeded to these final conclusions has been sufficiently buttressed by statistical measurement at all major points, and our final estimates have been checked against the practical experience and criticism of technicians and business men to an extent that eliminates possibilities of serious error."³

On the basis of the facts assembled, the Brookings Institution concluded that in 1929, at the end of the era of post-war economic expansion, there was an average utilization in industry as a whole, of only about 81 percent of total capacity, leaving an excess of practically attainable production of about 19 percent. This would have added approximately \$15,500,000,000 to actual production in 1929 and would have brought the total in that year up to \$97,500,000,000. We were not living beyond our means in

² Moulton, Harold G. *Income and Economic Progress*. Washington, D. C.: Brookings Institution, 1935. 191 p.

³ Nourse, Edwin G., and Associates. *America's Capacity To Produce*. Washington, D. C.: Brookings Institution, 1934. p. 23, 27, and 28.

1929. We were not trenching on our resources of capital goods or of labor. Rather, "our economic society lacked almost 20 percent of living up to its means."⁴

If full use had been made of productive capacity in the years 1922 to 1929, the income of the American people would have been increased by approximately \$113,000,000,000 or \$14,000,000,000 a year. In the four years, 1930, 1931, 1932, and 1933, the loss in potential income, assuming that 1929 productive power remained constant through this period, aggregated in 1929 dollars about \$135,000,000,000, or approximately \$34,000,000,000 a year. In general, during the period 1922 to 1935, the productive system of the nation operated at little more than two-thirds efficiency.⁵

The National Resources Committee reports similar findings. It estimates that during the eight-year period 1929 to 1937, loss through low production:

"... due to the idleness of men and machines . . . was in the magnitude of 200 billion dollars' worth of goods and services. Most of this represents sheer waste, though to some extent it reflects a smaller depletion of natural resources.

"The significance of this figure of 200 billion dollars is hard to grasp, but some idea can be obtained by considering what 200 billion dollars would mean in terms of concrete goods. If all the idle men and machines could have been employed in making houses, the extra income would have been enough to provide a new \$6,000 house for every family in the country."⁶

Improved Practices Would Greatly Increase Production.

Opinions of prominent engineers, summarized in the Columbia University study, estimate that the output of

⁴ *Ibid.*, p. 425.

⁵ Moulton, Harold G. *Op. cit.*, p. 27-30.

⁶ National Resources Committee. *The Structure of the American Economy*. Washington, D. C.: Government Printing Office, 1939. p. 2-3.

all industries could be increased by approximately 78 percent if equipment and management could be raised to the level of best current practice. Even with existing equipment, it was estimated that on the average a 36 percent increase in the output of all industry could be effected.⁷

The National Survey of Product Capacity attempted to develop a chart or "flow sheet" by which the progress of the production of commodities could be traced from the raw materials in which they originated to the final consumer. The objective was to discover whether it is possible to achieve a level of production which would provide a comfortable standard of living for all. The investigators concluded that this would have involved production in 1929 amounting to \$135,516,000,000, as compared with an actual production, according to their methods of estimate, of \$96,553,000,000. They also concluded that existing equipment in 1929 was sufficient not only to produce the additional \$38,963,000,000 worth of goods and services necessary to establish a comfortable standard of living for the entire population, but to replace obsolete and worn-out capital equipment as well.⁸

*Engineers and Economists Agree That Productivity
Can Be Substantially Increased.*

The foregoing estimates of the yearly value of goods and services which our economy is capable of producing, range from \$97,000,000,000 to \$135,000,000,000.

Several conclusions may be drawn from the studies cited and many others which arrive at similar findings. First, engineers and economists generally agree that the level of production reached in the 1920's should not be looked upon as a maximum. They disagree as to how much it is rea-

⁷ Columbia University Commission. *Economic Reconstruction*. New York: Columbia University Press, 1934. 250 p.

⁸ Loeb, Harold, and others. *The Chart of Plenty*. New York: Viking Press, 1935. 180 p.

sonable to expect to increase our income over the levels of the 1920's, mainly because of differences in their methods of inquiry and the assumptions upon which their estimates rest. There is no disagreement, however, as to the physical possibility of increased production.

Second, even the most conservative estimates suggest the clear possibility of increasing the national income, on the basis of existing facilities, by an amount which is several times the present cost of education, and of what its cost would be if it were effectively free.

Gains in National Income May Be Expected.

The preceding analysis indicates that the nation already possesses the physical requisites, such as labor supply, natural resources, and plant and equipment, necessary for an income considerably larger than that of recent years, or even of the peak year 1929. The depression of the 1930's is due to economic maladjustments and incoordinations rather than to lack of physical means of production.

The problems involved in resolving the maladjustments and incoordinations in our economy are, however, enormous. Many proposals have been made as to what needs to be done to decrease the gap between actual and potential productivity. Some believe that the solution is to be found in an increase of consumer purchasing power through a gradual reduction in the prices of consumer goods, made more abundant through more efficient methods of production. Others advocate increased use of certain taxes to prevent oversaving which they claim leads to depressions. Through taxes upon income and inheritances at progressive rates, they would finance public services now paid for through proportional or regressive taxation. By partially releasing those of limited means from such taxes, their private purchasing power would be increased. Other econ-

omists declare that actual production would be brought nearer potential productivity if more were spent for capital goods, such as machinery, factories, stores, and transportation systems. Some writers have suggested that the advent of fortuitous events of economic significance, such as the development of one or more new industries or the stimulation resulting from a general war, is destined to play a central role in inducing economic recovery. This whole problem is further complicated by debate as to the proper function of government in relation to business enterprise.

It is beyond the scope of this report to arbitrate among the many specific proposals of economists and engineers for bringing about the more effective operation of the existing economic plant. It is enough to point out that those who are studying this problem exhibit no spirit of defeatism. Their writings do not assume continuing and permanent inefficiency in the use of our productive facilities. Rather, they justify the expectation of an eventual narrowing of the gap between potential and actual productivity. From the viewpoint of this chapter, the important fact which emerges from the preceding analysis, is that the initiation of the educational program proposed in this report need not be indefinitely delayed. The physical facilities requisite to a much higher national income are already in our possession. It is reasonable to expect that the means of putting these facilities into more effective operation will be found. As this is accomplished, it will become increasingly practical to finance the proposed educational program. In fact, the initiation and development of this program may be properly looked upon as one of the essential ingredients which should be included in any sound formula looking toward recovery and economic welfare. In short, it appears both feasible and wise to finance the proposed educational program concurrently with recovery.

The Proposed Program Should Be Initiated Promptly.

The development of the proposed program for maximizing the economic effects of education should be initiated at once. Some educational funds now expended for less vital purposes should be directed to this end. Funds from this source should be supplemented by additional appropriations as rapidly as conditions permit.

This policy is justified on the grounds that the proposed educational program in the long run will yield substantial economic returns. It will pay for itself since it promises to increase national income more than enough to cover the expenditures required.

Education may not be self-liquidating in the immediate and narrow sense of a toll road or harbor, where tolls and wharfage fees meet original investment and maintenance costs. Education of the right kind is self-liquidating in a far more fundamental sense than material improvements can be. In contributing to increased productivity, it helps to create the economic basis in national wealth and income upon which taxation for education and other governmental activities, as well as our whole standard of living, depends.

The financing of the proposed educational program for economic efficiency will involve surmounting certain practical fiscal and administrative hazards. Long-needed reforms which are of fundamental importance to the proper financing of education will have to be achieved. These are dealt with below.

An Equitable and Adequate Revenue System Is Essential.

Education is one of a series of public enterprises which involves taxation. It cannot be properly financed except through systems of taxation which are appropriate to modern economic conditions and adequate as to amount of revenue raised. The proper support of all governmental

activities, including schools and colleges, requires an adequate tax system, providing for a just sharing of the cost of government by all possessing taxpaying ability. The theory and practice of taxation have developed to the point where tax systems which meet these and other recognized criteria are possible. Materials available in publications of the National Tax Association, reports of the Twentieth Century Fund, studies of the Tax Policy League, and numerous texts on public finance, provide factual information and reasoned conclusions that are indispensable in the formulation of sound tax systems. Experts in the field of public finance, connected with universities and other reliable agencies, stand ready to offer sound advice. Any state, genuinely desiring to do so, may improve its tax system.

Few states thus far have made substantial progress in developing types of revenue systems, which are essential if the proper financing of a program of effectively free education, as well as other essential public enterprises, is to be possible. This situation must be fundamentally revised if the program for maximizing the economic effects of education is to be more than an unfulfilled ideal.

Plans Which Involve Pooling of Fiscal Resources Must Be Put into Effect.

The uneven distribution of taxpaying capacity between school districts and between states, which is characteristic of our industrial economy, requires the pooling of fiscal resources if equal educational opportunity is to be achieved. Gross inequalities in opportunity now characterize education in the United States. In some sections, schools and colleges are generously supported and rich educational opportunities are provided. In other sections the most meager facilities prevail. An individual's opportunity is not determined by his capacity and willingness to work. Rather, as

was pointed out in an earlier chapter, fortuitous factors determine to a large extent whether youths shall have generous or little educational opportunity in the United States today. As a result, valuable human resources are wasted and the potential economic effects of education are not realized.

The methods whereby this situation may be corrected are now well known. They involve provision of sufficient financial support from the state to permit every school district to finance a minimum program of education through a fair and equalized tax on local property.

In brief, this involves the equitable taxation of wealth and income regardless of where they are located in order to educate all boys and girls regardless of where they live. Nothing short of the effective translation of this principle into practice will suffice. The alternative, inevitably, must be a continuance of present conditions of educational inequality and human waste.

Furthermore, it will not be possible to limit the application of this principle to state boundaries. Enormous differences in ability to finance education exist between, as well as within, states. Two national commissions, appointed by administrations of each of the major political parties, have studied this question during the last decade.⁹ Stubborn facts led both to conclude that provision of adequate educational opportunity for all American children must involve some pooling of the nation's fiscal resources. The conclusion of the latter of the two commissions was summarized as follows:

"The facts presented previously in this report indicate that no sound plan of local or state taxation can be devised

⁹ National Advisory Committee on Education. *Federal Relations to Education*. Two Vols. Washington, D. C.: American Council on Education, 1931.

Advisory Committee on Education. *Report of the Committee*. Washington, D. C.: Government Printing Office, 1938. 243 p.

and instituted that will support in every local community a school system which meets minimum acceptable standards. Unless the Federal Government participates in the financial support of the schools and related services, several millions of the children in the United States will continue to be largely denied the educational opportunities that should be regarded as their birthright.”¹⁰

More recently the American Youth Commission, headed by Owen D. Young and composed of eight laymen and eight educators, came to a similar conclusion after extensive investigation:

“In view of the marked inequality in tax resources among the several states, federal aid to the states for educational purposes, safeguarded against federal interference, is essential and should be expanded as rapidly as possible. . . . Equalization of educational opportunity should be regarded realistically, not as charity from wealthy cities and states to their poorer brethren, but as a necessary provision for national security. . . . On the same principle of equalization of educational opportunities, the nation cannot afford to permit any young persons to be deprived of proper opportunities because of the misfortune or even the poor management of their parents. In fact, the less worthy the parents, the more essential is some measure of public attention to the needs of their children.”¹¹

*Reorganization of Units of Attendance
and Administration Must Be Effected.*

Another report of the Educational Policies Commission deals at length with essential reorganizations in the structure and administration of American education.¹²

¹⁰ Advisory Committee on Education. *Op. cit.*, p. 47.

¹¹ American Council on Education, American Youth Commission. *A Program of Action for American Youth*. Washington, D. C.: American Council on Education, 1939. p. 15-16.

¹² National Education Association and the American Association of School Administrators, Educational Policies Commission. *The Structure and Administration of Education in American Democracy*. Washington, D. C.: the Commission, 1938. 128 p.

Here it is sufficient to emphasize that many of these reforms are prerequisite to maximizing the economic effects of education. Education of a high quality cannot be expected in most of the existing 127,000 local units of school administration. They are too small to permit the organization of schools with sufficient teaching personnel, equipment, and other facilities essential to a program of general and occupational education such as this report projects. They draw from too small a territory to obtain adequate lay leadership on boards of education. They lack the vision and the ability to provide the requisite professional personnel essential to administrative and supervisory leadership.

Similar recognition of the inadequacy of the resources of many higher educational institutions, as at present organized, is called for. The multiplication of colleges in some states has created an excessive number of these institutions, many of which are poorly equipped to discharge their responsibilities effectively either in general or in professional education. Correction of outworn patterns of organization as to structure and administration is essential at all levels, if potential economic as well as other returns from education are to be appropriately capitalized.

*Efficient Administration and Constructive
Economy Are Essential.*

The other elements of a plan for funding the program for maximizing the economic effects of education will require administration marked by efficiency and discriminating economy if the major objective is to be achieved. Competent leadership will be required in every state department of education as well as in the reorganized local units of administration. The method of securing state and county school superintendents by popular election which exists in many states must be abolished. A uniform and

continuous policy of honest, economical, and productive spending of all school money is essential.

More discriminating oversight on the part of the general public is of fundamental importance. This will require accurate, intelligent, and frequent reports to taxpayers and the general public on the management of school money. It will also require more discriminating and constructive attitudes with respect to taxation and the value of public services than are sometimes shown by certain sections of the public. The identification of economy with parsimony should be replaced by an attitude of critical but constructive appraisal. School budgets should meet the tests of genuine educational need and economical and efficient administration. They should not be expected to conform to the demands of those interested in beating down taxes regardless of educational and social effects.



X.

SECURING PUBLIC UNDERSTANDING AND ACTION

If I am right in my conviction that the conscious effort by the mass of men to produce an ordered society is the determining element of this age, then for a long time to come we shall not be allowed to rest and to take our ease, living on the consolidated achievements of our forefathers.

—WALTER LIPPMANN.

Are the recommendations of the report theoretically interesting, but impractical as a basis of action? Or, is it reasonable to expect, men being what they are, that enough success can be achieved in putting these proposals into action to effect measurable change in the contributions of education to economic welfare?

In a democracy the proper bases for improvement in social policy and action are public understanding and support. Such understanding and support are brought about through formal and informal agencies of education, civic associations, and other organized groups. Therefore, let us

identify the changes in public understanding and attitude which must be accomplished and the agencies and organizations which should participate in this process.

*Democratic Ideals and Economic Welfare
Are at Stake.*

The first public attitude which must be created involves understanding of the social and individual significance of effectively free education. In place of indifference toward inequalities in educational opportunity, there must be keen appreciation that their existence constitutes an abrogation of a fundamental imperative of American life—equality of opportunity.

In 1938 the nation expended \$1,622,000,000 for national defense. This was believed necessary in order that our lives and democratic institutions might be safeguarded from foreign aggression. It is probably true, however, that the threat to our democracy which resides in existing nullifications of equal opportunity is both greater and more immediate than that of foreign invasion. Distribution of opportunity according to economic and class lines, rather than according to ability and diligence, was the essence of the aristocratic systems to which the rise of the United States constituted so sharp a challenge. Will we permit position, rather than ability, to determine opportunity until the very foundation of our democratic order is undermined? The answer given to this question has great significance for the internal security of the nation.

The appeal to the public should be made on economic as well as on political and social bases. When qualified youths are unable to secure the training which will permit them to enter high-paid, rather than to remain in low-paid, callings, the total national income tends to be reduced. The result, in the long run, is that we all are poorer. When millions of qualified youths are predestined to earn at the level

of unskilled or semi-skilled labor merely because they are born in poor families, or in areas unable to afford good schools, the whole nation suffers economically.

It needs to be clearly understood that this uneconomic situation can be corrected only if education is made effectively free. This will permit youths with capacity and energy to rise from the ranks of unskilled and low productive labor, with resulting increases in the average of individual incomes and in total national income.

The program proposed in this report is crucial to the perpetuation of democratic ideals and to the achievement of greater economic well-being. The issues involved need to be clarified and dramatized until all American citizens comprehend their significance.

New Vision of Education as a Method of Democratic Progress Is Involved.

The free and universal public school system created in the United States during the nineteenth century has been called America's greatest contribution to civilization. The vision and courage of the people in creating this democratic institution constitute a landmark in mankind's upward climb.

Fundamental changes have taken place in American life since the foundations of our educational system were laid. We are in a period in which skill, technical and professional knowledge, social insight, and consistent and intelligent group action are essential. In developing all of these, schools and colleges make a vital contribution. Public vision and insight will determine the value of this contribution in the future.

Our forefathers in the nineteenth century had the insight and courage to transcend previous conceptions and practices as to what schools and colleges should do for a nation. They fashioned a system of universal, popular edu-

cation which had no precedents in other nations. It accorded with their ideals and met the needs of their times. We of the twentieth century, confronted with vastly changed conditions and baffling new problems, should do no less.

The nations of the western world are now in a period of profound transition. A handicraft and agrarian economy is being replaced by one characterized by science, technology, and the power-driven machine. The industrial order which is emerging inherently requires skill, technical knowledge, organization, coordination, and expert performance at many different levels. Above all, it involves intelligent direction and control.

We cannot choose whether these elements will or will not be present in our economy. They are inherent in industrialism. The area in which choice may be exercised concerns the character of the controls and the source from which they come. Requisite expertness, coordination, and control can be achieved under a system of government which emphasizes human regimentation and dictatorial direction. It can also be achieved under a system which respects human personality and involves democratic sanctions.

The degree of regimentation and dictatorial control will vary in inverse ratio to the extent that education and enlightenment prevail. Genuinely educated citizens require a minimum of compulsion to act intelligently. They obey rules necessary for personal and public health, follow the practices which promote good government, deal with each other on a plane of tolerance and humanitarianism, and order their economic affairs in an intelligent manner, because they know how to do these things and realize that it is wise to do them.

Democracy is a form of government through which people educate themselves to conduct their personal and

common affairs, with a maximum of intelligence. The amount and kind of understanding requisite in a society such as ours, can be provided only if we consciously, vigorously, and wisely use education to create it.

Better Bases of Appraising Public Expenditures Are Involved.

The educational program projected in this report promises in the long run to more than pay for itself through resulting increases in total national earned income. It requires, however, like any investment, that money be put into it. More taxes will have to be raised if education is to be made effectively free.

It is unfortunate that this fact alone will condemn the program in the minds of certain minorities in the United States, whose attitude toward all public enterprises is dominated by uncritical opposition to increased taxation. This viewpoint is reflected by such slogans as "the less taxation the better" and "any budget can be cut."

Now, it is true that any budget can be cut. In fact, it can be eliminated altogether. The important question, however, is not whether a budget can be cut or increased, but rather, what will be the effects of cutting or increasing it.

Indiscriminate criticisms of taxation and public expenditure usually rest upon certain assumptions. It is assumed that the amount expended for a public service in itself is of great significance. Hence all increases are condemned, while all decreases are commended. This attitude in turn rests upon the assumption that money expended under public auspices is somehow swallowed up without yielding a return, while private expenditures inherently and even automatically result in tangible dividends.

These assumptions fail to recognize that proper judgment cannot be passed on public expenditures in general, or on those for particular items, except through discriminating

consideration of what they buy. Governmental costs have steadily increased in the United States because an increasing population has demanded continuous expansion of public services. Public money now pays for the construction and maintenance of highways and streets swiftly traveled by nearly 30,000,000 motor cars and trucks. We pay for a vast range of services through taxation—flood control, reclamation work, river and harbor improvement, police and fire protection, sewage disposal, public health, a supply of pure water, parks and playgrounds, relief and social security, national defense, and public education in its many aspects.

Taxation and public expenditure are cooperative means of purchasing certain goods and services. Intelligent decisions concerning these services cannot rest merely on amounts spent. Is the service essential to general well-being? Is it more essential, and will it bring a greater return in worthy satisfactions and general well-being than possible alternative expenditures, whether public or private? This question must be asked again and again and answered with keen discrimination before a nation of free citizens can spend its income intelligently. The process is not an easy one, for it goes to the very roots of individual and social values, but it cannot be avoided by a people who would be intelligent in the use of their income.

Neither public nor private expenditures inherently or automatically result in social or individual benefits. One can readily think of private outlays which are far from productive, as for example, payments to astrologers or for habit-forming drugs and certain patent medicines. A close analysis of public expenditures will reveal that in general they purchase essential benefits, although exceptions occur as in the case of private enterprise.

Accordingly, there is no royal road to a decision as to what distribution of the national income should be made

between public and private enterprise. Decisions, which dogmatically assume a return or lack of return from public expenditure, reflect lack of discrimination. Intelligence requires that every public outlay be continually weighed against the difficult but fundamental criterion of general benefit.

Governmental enterprise in a democracy is not equivalent to tyrannical tax impositions by conquerors or tyrants. Rather, public enterprise is an outcome of democratic action which seeks to promote general welfare. The fact that democracy is the impelling force behind expanding public action in itself, however, does not validate a given public enterprise. Every public activity should be appraised against additional tests. Will it result in a benefit essential to the well-being of society, which will otherwise be lacking in part or in whole? Will the quality of the commodity or service produced under public auspices be equivalent or superior to that which would result from private initiative? What is the relative cost under public as opposed to private production? Are corruption and wasteful administration absent and honesty and efficient management present? Is the revenue for financing the service obtained by methods which are equitable and sound? When a state activity can meet tests such as these, it is justified. Otherwise, it is not.

“An increase in taxes has been viewed, *per se*, as an evil. Such a position is wholly an illogical one. Though governments may spend more, they do more; and it may well be that the increased demand made upon the taxpayer is more than offset by the additional service rendered to him. The really important things are not so much the grand totals of governmental revenues and expenditures as the sources from which such revenues are derived and the purposes to which the expenditures are devoted, the extent to which governments are improving their financial condi-

tion through the payment of their debts or the reverse, and the like.”¹

The foregoing considerations bear directly on the problem of financing the educational program projected in this report. This program cannot be put into action without some additional expenditures. The amount required is not large considering the nation's actual and potential productive capacity. The increased expenditures can be added gradually. The costs will, in the long run, be more than met by increases in income. The development of the program along these lines is in accord with sound economic theory.

“Parks and playgrounds, schools and text books . . . yield to the public generally important satisfactions and services which they might not otherwise be able to obtain. As the years pass, the furnishing of such services out of funds derived from taxes might well be made very much more important than has been the case heretofore. The field of opportunity is here very great and the services rendered are of a fundamentally important character.”²

Similar considerations doubtless caused Henry Carter Adams, one of the great minds which America has produced in the field of finance, to say in his *Science of Finance*: “A continual increase in the educational budget must be expected as a natural result of social development, and may be accepted as a normal expression of a healthful society.”³

Accordingly, the Commission urges that the program proposed in this report be judged on its merits. It should be neither supported nor condemned until it has been appraised against criteria which are valid and appropriate.

¹ Willoughby, W. F. *Financial Condition and Operations of the National Government, 1921-1930*. Washington, D. C.: Brookings Institution, 1931. p. 3.

² Moulton, Harold G. *Income and Economic Progress*. Washington, D. C.: Brookings Institution, 1935. p. 100.

³ Adams, Henry Carter. *The Science of Finance*. New York: Henry Holt and Co., 1898. p. 72.

Sound Attitudes on Occupational Distribution Are Essential.

Earlier chapters of this report have discussed criteria which should guide entrance to occupations. When occupational distribution is thus determined, the outcome is both socially and economically desirable according to democratic standards.

The use of education as a means of promoting occupational mobility and of disintegrating class lines based on caste and inherited position will appear disturbing to some, although education has been doing this for a century. The disturbing thing today is that it is not doing it well enough. So long as society demands additional workers in certain callings as indicated by willingness to pay superior wages or salaries to those working in them, then all youths who possess the capacity and diligence to qualify for these callings should be admitted. Such a policy tends to thin out the ranks of unskilled labor. The effect should be to raise average and total income, although some individual incomes, enjoyed primarily because of artificial scarcity and monopolistic position, may be reduced.

The program of education to achieve optimum occupational distribution should be developed gradually. Accurate and extensive occupational information must be assembled and intelligently interpreted. The evils which result from an over-supply of workers in particular callings should be guarded against. Educational methods as opposed to those which employ regimentation should be emphasized.

High Standards and Occupational Mobility Are Both Possible.

A profession or trade may well establish high standards for admission. On the other hand, no profession or trade should expect to enforce arbitrary numerical limits, the purpose of which is to perpetuate a scarcity of needed

workers as a means of keeping up the incomes of those already admitted. Specifically, this proposal would mean that artificial limitations on the number of persons admitted to certain professional schools and to certain occupations would be removed; so would artificial limitations on the number of persons admitted to apprenticeship in certain trades.

Standards required for successful operation in professions and trades should be carefully developed. These should be based on competent judgment and would be relative at any given time to the number of qualified persons available. Ability to reach these standards and the social need for workers in the occupation, rather than limitation in terms of some arbitrary number, would decide whether an applicant might enter the profession or trade. Also, careful guidance, which would supply the fullest possible pertinent information as described in earlier chapters, would be required.

Effectively Free Schooling Promises More Equitable Distribution of Earned Income.

In addition to increasing the total national income, the provision of effectively free schooling will tend to assure a more equitable distribution of that income. Existing inequalities in distribution of income have been a matter of much concern to some during recent years and several remedial plans have been proposed. Whatever may be said for more direct methods of attack on this problem, the least that can be done if the great American tradition of equal opportunity is to prevail, is to remove artificial barriers which now prevent millions of youths from fully capitalizing their talents.

It should be clearly understood that this proposal does not involve a complete and general leveling of wages and salaries. If all persons were given equal educational oppor-

tunity, greater remuneration would follow upon greater efficiency, ability, zeal, and service. The reward is probably a fundamental motivator of human nature. The removal of artificial barriers, which is proposed here, would give this incentive greater scope rather than less.

The argument is not advanced that education is a panacea for all economic ills and injustices. Some of the most extreme differences in income arise from funds received from fortunate investments, windfalls, inheritances, and pure luck, rather than from the differences in wages and salaries paid various classes of workers. Reasonable equality of earned income is not the perfect answer to all problems of the distribution of national income for the simple reason, among others, that the total of earned income is less than the total amount of national income. Earned income does, however, comprise a large part of the total. Between 90 and 95 percent of the population rely largely on earned income for support.

But even with this and other limitations granted, the full power of education to make economic conditions more equitable has not been used. The distribution of earned income is one matter that is affected in a direct manner by the quantity and quality of schooling offered. America can, by providing the correct amount of schooling and by training the proper number of persons for each occupation, contribute to more reasonable equality of earned income. Existing inequalities, so far as they are an outcome of limited availability of schooling and are not due to individual ability and other personal qualities, can be greatly ameliorated by making schooling completely, freely, and effectively available to all who can and will use it.

All people are not of equal energy and ability and it is neither desirable nor possible, therefore, to obtain an equalitarian distribution of earned income through education. It is impossible to say in advance exactly what differentials

in income would remain if arbitrary barriers to education were completely removed. The only method by which this could be determined would be to remove these barriers and see. Those who believe in our historic doctrine of equality of opportunity will support this proposal.

The most reasonable assumption is that the distribution of income would somewhat approximate the distribution of ability and energy. The income of an individual in one occupation would tend to become approximately equal to that of any other person of like ability in any other socially useful occupation. The distribution of income to be obtained through education is not, then, absolute equality of income for all, but rather, greater equality for those of like ability and energy regardless of the occupation in which the income is earned.

If America is to live up to one of the basic assumptions of its democracy, equality of opportunity, it is imperative that all artificial barriers to occupations be removed. If this is done, not only will the total income be increased, but greater equity in the distribution of earned income will be achieved.

Sound Economic Education Will Benefit Private Business Enterprise.

The program proposed in this report would strengthen industry on the productive side. Skilled and intelligent workmen become more important as business enterprise is more and more based on science and technology and the use of expensive capital and equipment. America until now has imported much of its skilled labor. The time has come to train it at home.

The program also assumes an increase in the percentage of consumers who are economically literate. Sound business has nothing to fear from intelligent consumers. Such consumers will support concerns which aim at giving the maxi-

mum in quantity and quality consistent with reasonable profits and proper treatment of labor.

The program projected in this report would strengthen sound business enterprise at a number of crucial points. It would give it an adequate supply of trained and intelligent workers. It would provide a consumer market with a maximum of purchasing power. It would contribute to the better understanding essential to proper solution of such problems as labor relations and those between government and business. It would provide the inestimable benefits which would accrue from increasing the economic intelligence of all the people.

Educational Statesmanship Will Need To Be Exercised.

Earlier sections of this report have pointed out needed revisions in kind of education and in administrative organization. These will require cooperation of both lay and professional personnel concerned with the control and conduct of schools and colleges.

There are more than 400,000 laymen who hold positions on boards of education, school committees, and similar bodies. The districts over which they have jurisdiction were in many instances established long before good roads, automobiles, and modern methods of communication were available. Many of the existing 127,000 local school districts cannot be expected to organize and administer the type of program proposed in this report. Basic reorganizations must be accomplished. This will involve vision and devotion to the general welfare.

In accomplishing essential reorganizations, statesmanlike leadership should be expected from the 10,000 school and college administrative officers in the United States. The rank and file of teachers are also intimately concerned. The projected program in the course of the years will un-

doubtedly involve substantial revisions in the content and methods of school and college work. Greater differentiation to take account of the non-intellectual boy or girl will be required. A much better informed and discriminating type of educational and vocational guidance must be developed. Closer cooperation between industry, government, and education will be required. Education must be more definitely concerned with real life problems.

This will involve flexibility of mind, clear educational purpose, and energy on the part of the rank and file of teachers. It will also require greater recognition by boards of education and the public generally that oversized classes and overloaded teaching schedules are neither conducive to good classroom work nor to the individual acquaintance with, and guidance of, children and youth which is inherent in the program projected. Those who have never had experience in teaching sometimes do not realize the energy required by good teaching, involving helpful, individual contacts with many different personalities.

Courageous acceptance of the responsibilities of leadership by the schools and colleges of the United States will do more to put the projected program into action than any other factor. It is not too much to expect that the organized teaching profession will accept leadership in advancing public understanding and action on the program proposed in this report.

Professional Standards of Administration Are Required.

Successful operation of the proposed program will require expert and professional standards of administration at many points. There are signs that the Jacksonian idea that governmental administration can be successfully discharged by amateurs of brief tenure is being displaced by a realization that modern conditions demand expertness and

continuity in public service. Substantial progress has been made in requiring professional standards of training and performance in school administration. Some progress has been made in securing the adoption of similar standards in municipal and state governments. Acceleration of the trend toward professional standards of administration should permit efficient management of the projected program for economic well-being.

*Participation by All Agencies of Community
Enlightenment Is Essential.*

What are some of the agencies of leadership which may be expected to come to the front in implementing the proposals of this report? One has already been identified—the educational system. The schools and colleges of the nation may provide facilities of study and discussion essential to understanding and implementing a program of this type. Adults, as well as children and youths, should be involved. Extension work of universities and colleges, and the adult educational activities of school systems, should accept a major responsibility for enlightening the general public. The process will be too slow if we wait for children and youths now in school to replace the present adult population. The methods used should be educational, and appropriate to a democracy, rather than propagandistic. This proposed program should be advanced in every legitimate way by the organized teaching profession, through its numerous national, state, and local associations.

The carrying out of the proposed program, however, should involve all educational agencies—not merely schools and colleges. It is the economic welfare of society as a whole which is involved. It is appropriate, therefore, that all agencies of education participate in promoting the program. The press—newspapers, magazines, books, and other publications—may be expected to play an important part. The

radio, through its forums and other programs aimed at enlightenment, may also make a major contribution. The numerous occupational, civic, fraternal, patriotic, and religious organizations should participate. Associations of professional workers, of executives of trade and industry, and of labor and agriculture, should be vitally interested. Women's organizations may well make the difference between success and failure in putting the proposed program into action. Their members have the understanding and time necessary for study of the issues involved. They may provide much of the civic leadership required.

*There Is No Royal Road to Wise Public
Policy and Action.*

This chapter has dealt with the practicality of putting the findings of the report into practice. Action in the directions projected must be based upon understanding of the close relationship of the proposed program to the perpetuation of the democratic ideal of equal opportunity, as well as to the achievement of greater economic well-being. It will necessitate new vision as to the role of education in serving society. It will involve clear thinking concerning the relative roles of public and private expenditure in a democratic, industrial economy. It will require that general well-being take precedence in determining occupational distribution. It will necessitate the recognition by business that trained and intelligent workers and consumers are both essential to sound business enterprise. It will require the triumph of statesmanship over provincialism in developing appropriate educational facilities and organization. It will necessitate continued progress in developing professional standards of administration in education and in general government.

The attainment of the foregoing goals calls for the interest and cooperation of a wide range of organizations.

It is urged that all agencies of education and enlightenment join in applying educational methods to the achievement of the educational reforms and extensions contemplated.

This whole report, in a word, is a proposal for continuing and further perfecting one phase of the brave experiment in democracy which our American forebears launched more than a century and a half ago. There was no definite and exact manner in which they could have known that such a great social innovation would be successful. It required vision, faith, and courage for a few million colonists to found a republic far on the edge of a hostile world. It required the same qualities to build a system of free and universal education appropriate to the needs of such a government.

It will require vision and courage to continue our great educational experiment along the lines projected in this report. It appears, as far as fact, logic, and man's poor prescience can prophesy, that such a course of public action will be a wise one on several bases—including the economic—with which this document is primarily concerned. The Educational Policies Commission urges careful thought and positive action on the program here proposed. It believes that such action can be the product of dynamic citizenship, in which statesmanlike leadership and intelligent rank and file response are complementary elements. There is no other way in a democracy.

INDEX

- Ability, individual
 - basis for college attendance, 172
 - differences in, 157-158
 - educational provisions in relation to, 122-126, 158-159
 - measurement of, 160
- Abramson, Victor. *See* Lyon, Leverett S., joint author
- Accidents, reduction of, 16-17
- Adams, Henry Carter, on educational expenditures, 208
- Adams, Thomas, on housing, 60
- Adult education
 - extension services, 20, 215
 - forums, 37
 - improvements needed in, 37
 - occupational training and retraining, 98-99, 182
 - part of effectively free program, 174
- Advertising
 - amount spent for, 48
 - contributions of, 50-51
 - mass production, relation to, 47
 - weaknesses in, 47-48
- Advisory Committee on Education, on
 - federal aid for education, 196-197
 - high-school attendance, expense of, 138-139
 - Negro education, 151
 - skilled workers, need for training of, 82
 - student aid, 140, 161
 - cited, 169
- American Youth Commission, on
 - federal aid for education, 197
 - health facilities, inadequacy of, 17
 - high school drop-outs, 135, 136-137
 - occupational opportunities and skill required, 87
 - rural poverty and education, 150
 - school attendance and family income, 141-142
- Avocations
 - education for, 66
 - expenditures for, 64
- Badger, Henry G.; Kelly, Frederick J.; and Greenleaf, Walter J., cited, 165
- Baker, Elizabeth F., cited, 86
- Barnard, Chester I., on education and productivity, 7, 13-14
- Beard, Charles A., cited, 77
- Bell, Howard M., on
 - vocational education, 125
 - cited, 115-116, 135, 137
- Better business bureaus, 50
- Bingham, Walter V., on amount of education needed, 85
- Bowyer, Vernon, on school support and per-capita wealth, 27-28
- Briggs, Thomas H., on
 - secondary education, length of, 131
 - cited, 94
- Brookings Institution, on productivity potential, 189-190
 - relation to consumption, 70
- Brunner, Edmund deS., cited, 115
- Buck, Norman Sydney. *See* Fairchild, Fred Rogers, joint author
- Bye, Raymond T. and Hewett, William W., on education, 12
- Caliver, Ambrose, cited, 151
- Capacity. *See* Ability, individual
- Capital
 - concentration of, 35
 - education's contribution to development of, 22-23
 - factor in production, 21
 - organizations of, 36-37
- Carley, Verna A., cited, 145
- Carnegie Institute of Technology, 86
- Carver, Thomas Nixon, on training of talent, 158-159
- Carver, Thomas Nixon and Lester, Hugh W., on
 - education and mobility of labor, 106
 - incentive to personal effort, 10
- Cassady, Ralph. *See* Waite, Warren C., joint author
- Cassels, John M., cited, 72
- Caswell, Ellis A., cited, 115

- Chamber of Commerce, on unemployment, 11
- Chase, Stuart and Schlink, F. J., cited, 46
- Chicago, study of education and income in, 117
- Children, gifted
economic limitations of many, 135-136, 142-143
NYA aid for, 135
student aid for, in high-schools, 145
- Clark, Harold F., on
earnings of unskilled and professional workers, 119
effectively free education, 108
occupational distribution, 121
- Clothing
education for wiser purchasing of, 58-59
expenditures for, 58
- Coles, Jessie V., cited, 49
- College alumni, economic status of, 119
- College students, mentally superior
economic limitations of many, 142-145
NYA aid for, 140, 146-147
scholarships for, 145-146
- Colleges and universities
attendance, factors conditioning, 136-142
economic problems, study of, in, 42-43
enrollment in, 1, 125
extension work, 20, 215
occupational education, 90-91
research contributions of, 22-23
student aid in, 145-146, 164-166
tuition fees in, 165
- Columbia University Commission, cited, 191
- Committee on Elimination of Waste in Industry, 188
- Compulsory school attendance
present minimum, 129
proposed minimum, 128-130
- Compton, Karl T., on
chemical agriculture, 55
scientific research, 22-23
- Conant, James B., on
Harvard scholarships, 147-148
social mobility, 155
superior students not in college, 148
working way through college, 166
- Consumer education
difficulties encountered in, 52
kind needed, 44-73
technical phases of, 70-73
- Consumers
cooperation, 48-49
difficulties, 46-48
education, 44-73
expenditures, 53-54, 56, 58, 59, 62, 64, 67
organizations, 71-73
power, 44-45
social responsibilities, 73-74
standards of value, 51-52
- Cooperative attitudes, development of, 37-38
- Counts, George S., on selective character of high schools, 134
- Cowley, W. H., on NYA students in Ohio, 146-147
- Dailard, Ralph C., on school drop-outs, 136
- Defense, national, expenditures for, 202
- Dewhurst, J. Frederick. *See* Stewart, Paul W., joint author
- Dietary customs, effects of, 57-58
- Dollard, John, on Negro education, 151
- Douglass, Harl R., on length of universal education, 131
- Drake, C. Ellwood. *See* Kefauver, Grayson N., joint author
- Dublin, Louis I. and Lotka, Alfred J., cited, 15
- Eckert, Ruth E. and Marshall, Thomas O., on
college opportunity, inequality of, 141
drop-outs, economic status of, 136
rural education, 150
cited, 117

- Economic contributions of education, statements by:
- Barnard, Chester I., 7, 13-14
 - Bowyer, Vernon, 27-28
 - Bye, Raymond T. and Hewett, William W., 12
 - Carver, Thomas Nixon, 159
 - Carver, Thomas Nixon and Lester, Hugh W., 10, 106
 - Compton, Karl T., 22-23
 - Edwards, Newton, 37-38
 - Ely, Richard T. and Wicker, G. R., 107
 - Emerson, Ralph W., 1
 - Fairchild, Fred Rogers and others, 15, 106
 - Gemmill, Paul Fleming, 25, 148
 - Marshall, Alfred, 13, 25, 187
 - Odum, Howard W., 29
 - Seager, H. R., 103
 - Seligman, Edwin R. A., 9
 - Senior, Nassau W., 26
 - Taussig, F. W., 107, 111
 - Todd, Arthur James, 31-32
 - Wootten, Barbara, 106
- Economic intelligence, need for, 35
- Economy, right kind of, 198-199
- Edie, Lionel D., on education and wages, 120
- Educational expansion
- bases for, 156-157
 - proper limits of, 113-114, 122, 126-127
- Educational inequality
- extent of, 2, 134-142
 - factors responsible for, 2, 134-136, 149, 153
- Educational Policies Commission, on education
- contributions of, 6
 - exaggerated claims for, 30
 - equality of opportunity, 9
 - local units, reorganization of, 197
 - publications of, 3
 - secondary education, length of, 129, 131
 - social services, 94, 185
 - vocational education, 75, 91, 96, 100
 - cited, 92, 134, 175, 179
- Edwards, Alba M., on workers, distribution of, 85
- Edwards, Newton, on
- economic literacy, 37-38
 - occupational distribution, 170
 - cited, 87
- Effectively free education
- advanced levels of, 160-162
 - college standards, effect on, 168
 - cost of, 174-184
 - definition of, 107-108
 - income, effect on, 108, 119-121, 210-212
 - limits for, test of, 113-114, 120
 - occupational mobility, effect on, 113
 - occupational standards, effect on, 171-172
 - proposed program of, 107-109, 128-131, 160-162
- Elementary school
- costs, 175
 - population, 175
- Ely, Richard T., and Wicker, G. R., on education, 107
- Emeny, Brooks, on natural resources, 21
- Emerson, Ralph Waldo, on education and prosperity, 1
- Engineering education, 83
- Equality of educational opportunity
- American ideal of, 1-2, 9
 - limitations on, 149-153
 - program for increasing, 107-109
 - stimulus to personal effort, 9-10
- Ethics, education's relation to, 6, 73, 162-163
- Expenditures for
- clothing, 58
 - education, 4, 184
 - food, 56
 - governmental services
 - amount, 3, 67-68
 - bases for appraising, 205-208
 - health, 62
 - recreation, 64-66
 - shelter, 59
- Fairchild, F. R.; Furniss, E. S.; and Buck, N. S., on education, 15, 106

- Family income
distribution of, 53-54
school attendance, relation to, 138-145, 148
- Federal aid, pronouncements favoring, 196-197
- Federal Trade Commission, work of, 49-50
- Federated American Engineering Societies, cited, 188
- Field, Louise. *See* Stewart, Paul W., joint author
- Fisher, Irving, on trade schools and wages, 120
- Fletcher, S. W., cited, 22
- Food
expenditures for, 56
education for wiser choice of, 56-58
production, 54-55
- Fortune*, poll on vocational training, 90-92
- Foster, Emory M., on school survival rates, 134
- Friedman, Milton. *See* Kuznets, Simon, joint author
- Gemmill, Paul F., on
education for business life, 25
wasted human talent, 148
- Geography, effect on educational opportunity, 149
- Gilks, J. L. *See* Orr, J. B., joint author
- Goetsch, Helen B., on inequality of college opportunity, 141
- Gorseline, Donald Eugene, on schooling and income, 118
- Greenleaf, Walter J., on
economic status of college alumni, 119
See Badger, Henry G., joint author
- Gulick, Luther Halsey, on
education and social change, 33
cited, 165
- Gustafson, A. F., on
education for conservation of resources, 20-21
cited, 19
- Hall, Charles Martin, inventor, 22
- Hamor, W. A., cited, 23
- Hardy, Martha Crumpton and Hoefer, Carolyn H., on health education, 16
- Harvey, Oswald L. *See* Johnson, Palmer O., joint author
- Health Education
contributions of, 15-17, 62-63
facilities for inadequate, 17
- Hearings, U. S. Senate, on waste of natural resources, 19
- Heer, Clarence, cited, 4
- Hewitt, William W. *See* Bye, Raymond T., joint author
- Higher education. *See* Colleges and universities
- Hoefer, Carolyn H. *See* Hardy, Martha Crumpton, joint author
- Holt, Frank O., on superior youths not in college, 141
- Horner, Harlan H.,
cited, 137
- Housing, *See* Shelter
- Howe, Harriet, cited, 53
- Hunt, Edward Eyre, on leisure, 64
- Income
individual,
education, effect on, 115-117, 122
family,
distribution of, 53-54
school attendance, conditioned by, 138-145, 148
national,
amount of, 1, 53
distribution of, 53
education, effect on, 106, 120-121, 210-212
fluctuations in, 3
gains expected in, 192
occupational efficiency, relation to, 104-105
- Industrial relations
need for improvement of, 36
study of, recommended, 36-37
- Inter-relations of education and economics, 5-6, 127
- Jackson, Dugald C., cited, 23
- James, J. A. and Kolb, J. H., on Wisconsin rural youth, 150

- Jerome, Harry, on
mechanization in industry, 81
cited, 11, 78
- Johnson, Palmer O. and Harvey, Oswald L., on financial aid for students, 140
- Junior college
cost per student, 177
part of common school system, 130-131
regional, 96
- Kefauver, Grayson N.; Noll, Victor H.; and Drake, C. Elwood, cited, 135
- Kelly, Frederick J. *See* Badger, Henry G., joint author
- Kimball, Bradford F., on
occupational pattern, 77
cited, 80
- King, Willford I., on educated manpower, 18
- Koepke, Charles A., on skill among factory workers, 78
- Kolb, J. H. *See* James, J. A., joint author
- Kotschnig, Walter M., on unemployment in professions, 112
- Kuznets, Simon and Friedman, Milton, on incomes in professions, 120
- Kyrk, Hazel. *See* Monroe, Day, joint author
- Labor
efficiency of, increased by education, 8-14
factor in production, 7, 8-10
organizations, study of problems of, 37
relations, 36-37
vocational education, interest in, 93
- Lang, Richard O., cited, 117
- Learned, William S. and Wood, Ben D., on superior students not in college, 143
- Leaving school, causes of, 2, 135-138, 144-145
- Lee, Edwin A., cited, 99
- Lester, Hugh W. *See* Carver, Thomas Nixon, joint author
- Leven, Maurice; Moulton, Harold G.; and Warburton, Clark, cited, 56
- Life expectancy, increase in, 15-16, 63
- Lindley, Betty and Ernest K., on
NYA-aided students, 140
cited, 135, 146
- Lindley, Ernest K. *See* Lindley, Betty, joint author
- Lippmann, Walter, on social action, 201
- Loeb, Harold, cited, 191
- Lotka, Alfred J. *See* Dublin, Louis I., joint author
- Lull, Orren H., cited, 140
- Lyon, Leverett S.; Watkins, Myron W.; and Abramson, Victor, cited, 50
- MacFie, Alec L., on economy and value, 52
- Malnutrition
cause of, 45-46
cumulative effects of, 57
education needed to prevent, 56-58
extent of, 56
- Management
factor in production, 24
general education's contribution to, 24-25
qualifications for, 24
university's contributions to, 25-26
- Manuel, Herschel T., on superior students not in college, 144
- Manufacturing, proportion of skilled workers in, 77-78
- Marshall, Alfred, on
benefits of education, 13
education of leaders, 25
expenditures for education, 187
- Marshall, Thomas O. *See* Eckert, Ruth, joint author
- Maryland, youth survey in, 125, 136
- Massachusetts, survey in, 142-143
- McCall, W. C., on student aid, need for, 137, 139
- McNeely, John H., on college student mortality, 137-138

- Mechanical competency
by-product of industrial life, 39
education's relation to, 39-40
- Mechanization, relation to skilled labor, 80-81
- Melvin, Bruce L. and Smith, Elna N., cited, 150, 151
- Metropolitan Life Insurance Company, on life expectancy, 63
- Miller, S. D. L., cited, 147
- Milwaukee, survey in, 141
- Minnesota, study of manufacturing plants in, 78
- Mitchell, Wesley C., on consumer choices, 51
- Mobility of labor, education's contribution to, 14-15
- Monroe, Day; Kyrk, Hazel; and Stone, Ursula B., cited, 56
- Montgomery, Donald E., cited, 45
- Mort, Paul R., cited, 182
- Moulton, Harold G., on capital, growth of, 69-70
expenditures, public, 208
cited, 189, 190
See Leven, Maurice, joint author
- National Advisory Committee on Education, cited, 196
- National Bureau of Economic Research, on mechanization in industry, 78
- National Industrial Conference Board, on public expenditures, 173
skilled workers, shortage of, 82-83
cited, 78
- National Occupational Conference, cited, 91
- National Resources Board, on natural resources, waste of, 19
- National Resources Committee, on agricultural experiment stations, 22
business organization, 24
consumer expenditures, 53-54
economic organization and individual freedom, 38
incomes of families, 138
losses due to low productivity, 190
occupational distribution, 171
occupational opportunities and skill required, 86
occupations, shifts in, 88
cited, 23, 53, 78, 139
- National Survey of Product Capacity, 191
- National Survey of Secondary Education, 135
- National Tax Association, 195
- National Youth Administration
student aid provided by, 135, 139-140, 181
success of students aided by, 146-147
- Natural resources
conservation of, 18-21
production, relation to, 18
rank of the United States in, 19, 21
waste, examples of, 19-20
- Negro education
availability, 150-151
economic status, relation to, 151
- New York City
accident reduction in, 16
environs, 65
regional survey of, 60
- New York State
occupational pattern in, 77
rural education, 150
scholarships for high-school graduates in, 137, 164-165
school attendance and economic status in, 141
survey of school drop-outs in, 116
- Noll, Victor H. *See* Kefauver, Grayson N., joint author
- Norton, John K., on length of universal education, 130
- Norton, Thomas L., on occupational choice, 169
skill required of workers, 80, 85-86
cited, 94
- Nourse, Edwin G., on potential productivity, 189, 190
- Nursery-kindergarten-primary school, its relation to economic well-being, 43-44
- Nystrom, Paul H., on economics of fashion, 58-59

- Occupational education. *See* Vocational education
- Occupational distribution
 correct basis for, 121, 209
 regimentation involved in, 169-171
 shifts in, 88-89
- Occupational mobility
 education's relation to, 105-107, 113, 158-159
 productivity, relation to, 14-15, 105
 standards, effect on, 209-210
- Odum, Howard W., on economic lag, causes of, in South, 28-29
- Ohio, testing program in, 143-144
- Orr, J. B. and Gilks, J. L., cited, 57
- Palmer, Emily G., cited, 89
- Pennsylvania
 scholarship holders in, 147
 testing program in, 143
- Perishability of educated man-power, 18
- Physical education, aim of, 16
- Pittsburgh, occupational survey in, 86
- Printing industry, skill required in, 86
- Private business enterprise and economic education, 212-213
- Production
 factors in, 7-8
 increase in relation to population, 27
 proportion of workers engaged in, 88
- Production schedules, consumers' responsibility for, 45
- Productivity
 complementary relation of education to, 31
 education's influence on, 7-32, 104-105
 expansion of, 27
 occupational mobility, relation to, 14-15
 potential, 188-192
 skilled labor, relation to, 10-11
- Professional workers
 earnings of, 119
 increases in, 77
 preparation of, 99-100, 110-111
 social responsibility of, 101
 unemployment among, 112
- Rainey, Homer P., on education and rural poverty, 150
- Ratcliffe, Ella B., cited, 146
- Recent Economic Changes, Committee on, 51, 64
- Recent Social Trends in the United States*, cited, 20
- Regents' Inquiry, Report of, on compulsory school attendance, 129
 non-academic courses, 125
 secondary school, selective character of, 136
 vocational education and wages, 116-117
 cited, 85, 169
- Research
 agricultural, 22
 economic welfare promoted by, 23
 industrial, 22
 occupational, 93
 university and college contributions to, 22-23
- Rosander, A. C., on economic stratification, 142
- Rose, Mary Swartz, on nutrition and health, 57-58
- Rural education, weaknesses in, 149-150
- Russell, John Dale, cited, 93, 94
- Safety education, effect on accident reduction, 16-17
- Savings
 amount of national, 68
 capital provided through, 70
 education needed for, 68-70
- Scholarships
 achievement of holders of, 147-148
 increases recommended, 164-165, 182
 number available, 145-146
 New York State provisions for, 137, 164
 Science, economic contributions of, 21-23, 27, 34, 40

- Science Research Associates, on skilled workers, 85
- Scientific competency, education's relation to, 40-42
- Scientific method
 application to economic problems, 41
 need for broader use of, 41-42
- Schlink, F. J. *See* Chase, Stuart, joint author
- Scott, Charles F., on technical education, 83
- Seager, H. R., on education, 103
- Secondary school
 changes needed in, 125
 cost of, 176, 177
 enrollment, 1, 134
 graduates
 increases in number of, 134
 percentage attending college, 125
 length of, 130-131
 NYA aid for students of, 139-140
 population, 175-176
 selective character of, 134
 withdrawal from, causes of, 134-136
- Selection of students
 bases for, 157-160
 occupational standards, influence on, 209-210
- Seligman, Edwin R. A., on economic value of education, 8-9
- Senior, Nassau W., on economic value of education, 26
- Shelter
 expenditures for, 59
 education for wiser purchasing of, 59-62
 number of new dwellings needed, 61
- Skilled labor
 demand for, 11, 81
 mechanization, relation to, 80-81
 productivity, relation to, 10, 12
 proportion of, increasing, 11, 84-87
 shortage in, 11-12, 82-83
 unemployment among, 11
- Slichter, Sumner H., on consumer ignorance, 71
- Smith, Elna N. *See* Melvin, Bruce L., joint author
- Social intelligence, education's responsibility for, 34-36
- South Carolina, college attendance in, 137, 139
- Spaulding, Francis T., on
 non-academic courses, 125
 secondary education, length of, 131
 wages and education, 116
 cited, 94, 129
- Spencer, Lyle M., on
 skilled workers, 85
 cited, 11
- Stack, Herbert J., cited, 16
- Standards
 administrative, 214-215
 college, effect of free education on, 168-169
 consumer, 45, 51-52, 74
 occupational, effect of free education on, 209-210
- Statesmanship, need for, 213-214
- Stewart, P. W.; Dewhurst, J. F., and Field, Louise, on
 consumer expenditures, 45
 cited, 27, 55, 88
- Stone, Ursula B. *See* Monroe, Day, joint author
- Student aid
 conditions for granting, 166-168
 educational standards, effect on, 168-169
 forms of, 164-166
 implications concerning, 162-163
 NYA, 135
 need for, 135-145
 occupational standards, influence on, 171-172
 private sources of, 145-146
 proposed program, 107-108, 128-131, 160-162
- Student employment, 166, 179
- Superior ability. *See* Children, gifted; and College students, mentally superior
- Taussig, F. W., on
 educated man-power, conservation of, 18

- environment and education, 124
- occupational choice, 133
- productivity and education, 107, 111
- Tax Policy League, studies of, 195
- Taxation
 - basis for appraising, 205-208
 - reasons for, 67-68
 - reforms in, 194-195
- Technical institutes, 83, 96
- Temporary National Economic Committee, cited, 24
- Texas, study of high-school graduates in, 144
- Text-books, cost per pupil, 177
- Thorndike, Edward L., on effects of education, 31
- Thornton, Jesse E., cited, 27
- Todd, Arthur James, on industry's dependence on education, 31-32
- Toops, H. A., on ability of college students, 144
- Twentieth Century Fund, on
 - consumer expenditures, 45
 - taxation, 195
- Unemployment, among
 - learned professions, 112
 - skilled and unskilled workers, 11
- Unskilled labor,
 - decreases in, 11, 77-78
 - proportion of, 11
 - unemployment among, 11
- United States Housing Authority, on dwellings, number needed, 61
- United States Soil Conservation Service, 19
- Universities. *See* Colleges and universities
- Urban Youth*, cited, 135
- Vocational education
 - bases for development of, 12, 76-77, 83-90, 109-111
 - criteria for selecting types of training, 97-98
 - extension courses, 99
 - Fortune* poll on, 90-91
 - function of, at different levels, 94-97
 - higher institutions, contributions to, 99-100
 - mobility of labor, relation to, 14-15, 105-107
 - numbers enrolled in, 99
 - principles, development of, for, 92-94
 - productivity, effect on, 10, 12, 14
 - retraining, provisions for, 98-99
 - school's responsibility for, 92
 - wages, effect on, 106-107
 - youth's desire for, 125
- Vocational guidance, 83, 93, 94, 119
- Waite, Warren C., and Cassady, Ralph, cited, 57
- Warburton, Clark. *See* Leven, Maurice, joint author
- Washington, Booker T., on Negro education, 152
- Watkins, Myron W. *See* Lyon, Leverett S., joint author
- Watson, Goodwin, cited, 149
- Webb, Beatrice. *See* Webb, Sidney, joint author
- Webb, Sidney and Beatrice, on increase in skilled workers, 76-77
- White House Conference on Child Health and Protection, cited, 56
- Wicker, G. R. *See* Ely, Richard T., joint author
- Willoughby, W. F., on governmental expenditures, 207-208
- Wisconsin
 - rural youth in, 150
 - testing program in, 140
- Wood, Ben D. *See* Learned, William S., joint author
- Wootton, Barbara, on education and mobility of labor, 106
- Young, Owen D., chairman, American Youth Commission, 197
- Zook, George F., on superior students not in college, 142-143





