

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Supplement to NBER Report Eleven: Youth, Education, and Work

Volume Author/Editor: Jacob A. Mincer

Volume Publisher: UMI

Volume URL: <http://www.nber.org/books/minc73-1>

Publication Date: 1972

Chapter Title: Supplement to NBER Report Eleven: Youth, Education, and Work

Chapter Author: Jacob A. Mincer

Chapter URL: <http://www.nber.org/chapters/c4219>

Chapter pages in book:

january 1973

11

NATIONAL BUREAU REPORT
supplement

Youth, Education, and Work

by

Jacob Mincer

Professor of Economics, Columbia University
and member, Senior Research Staff
National Bureau of Economic Research, Inc.



National Bureau Report and supplements thereto have been exempted from the rules governing submission of manuscripts to, and critical review by, the Board of Directors of the National Bureau. Each issue, however, is reviewed and accepted for publication by the Research Committee of the Bureau and a standing committee of the Board.

Copyright © 1973 by National Bureau of Economic Research, Inc.
All Rights Reserved

Printed in the United States of America

YOUTH, EDUCATION, AND WORK

by

Jacob Mincer

Professor of Economics, Columbia University

and member, Senior Research Staff

National Bureau of Economic Research, Inc.

Full-time work rather than full-time education was the major activity of teenage youth throughout history, until recently. Very few Americans finished high school a century ago; today the proportion is near 75 percent. Urbanization reduces the involvement of youth in a wide variety of work activities which are experienced in farm households. Even the acquisition of specific occupational work experience is progressively postponed as the period of schooling lengthens.

At the same time, the economic functions of the household are reduced by economic growth, and its membership continues to decline, from the extended to the nuclear family and from large to small nuclear units. The family "work force" employed in household tasks diminishes even more rapidly than its membership as productivity growth induces shifts of labor from non-market to market activities.

Compared to the large farm households in which farm and household work and the learning of related skills were combined, the contemporary urban setting reveals a separation of family, school education, and work. Children are segregated in environments of peers in classrooms, and in homes, where the few siblings are of similar age, and where

fathers and, increasingly, mothers are absent most of the day. The factory, office, or store into which father and mother disappear for much of the day become increasingly remote as work experience of children is progressively delayed by lengthened schooling.

These trends are being noted with growing apprehension by many observers, especially by psychologists and sociologists among the social scientists. The apprehension is succinctly expressed by Coleman: "Due to changes in the institutions of family, school, and workplace, young people are shielded from responsibility, held in dependent status, and kept away from productive work—all of which makes their transition into adulthood a difficult and troublesome process."¹ Undoubtedly, apprehension has been intensified in recent years by highly visible and often destructive manifestations of youthful discontent, particularly in schools and campuses, and to some extent also by an apparent high level of youth unemployment.

If the lengthening of schooling and the associated delay in work experience are the sociological villains of the piece, in what light do they appear from an economic point of view? Has schooling become excessive and unduly long? What are the economic bases

Note: This paper originated as a contribution to a session of the President's Panel on Youth. The session was held in Washington, D. C., in February 1972. James Coleman of Johns Hopkins University was the director of the panel. A report of the session written by Zahava Blum was very helpful in the present writing.

¹ James S. Coleman, "How Do the Young Become Adults?," Report 130, Center for Social Organization of Schools, Johns Hopkins University, May 1972.

and interpretations of some of the trends in family, school, and working life? Though economics cannot provide a complete insight into, and even less a basic solution for a complex societal problem, it can contribute to both by adding a perspective to those of the psychologists, sociologists, and educators.

In my attempt to do this, I first indicate the essentials of the economic analysis of education as an investment in human capital and its relevance to the questions posed about reasons and consequences of educational trends. Developments in the family represent much too large a subject and are touched only briefly. Developments in the youth labor market receive somewhat closer attention.

Education as Investment in Human Capital

Education is viewed by economists as an investment in human capital. It is an investment because it involves current costs and yields returns distributed over many periods. The capital embodied in man is accumulated knowledge and skill, both social and technical. This investment produces future satisfactions including augmented earning power.

The costs and returns of education might be evaluated from the vantage point of individuals (students), their families (parents), or society at large. Since the incidence of perceived costs and benefits is different for each of these parties, some of the attitudes and some of the behavioral responses are also different. Since actual investments depend on effective access to financing, economists distinguish between private and public investment decisions in education, and tend to ignore the distinction between the family and the dependent child (student), the family being viewed as a collective decision maker—whether or not the decisions represent a wholehearted consensus or an uneasy compromise. The latter distinction is not unimportant, either to the continuity or to the effectiveness of investment, but it has not, as yet, received sufficient analytical attention.

The costs and returns are monetary and

nonmonetary, direct and indirect. The major elements of costs are schooling expenditures (tuition in the private account, total school costs in the public calculation) and foregone earnings of students. The returns are the incremental real incomes obtained in consequence of the investment by the individual and by society. The largely unobservable or difficult-to-evaluate components are: effects of education on nonmarket (“consumption”) productivities, and so-called external effects. The latter occur when some benefits accrue to or some costs are borne by people other than the investors. Therefore, social returns (or costs) may be greater or smaller than the sum of private returns (or costs). The difference between the social and private sums is the value (positive or negative) of the externality.

Given the concepts of costs and returns to educational investments, economists ask the following basic questions:

1. Are activities which produce education efficiently organized?
2. Are too few or too many resources allocated to these activities?

Economists have made no significant attempts to grapple with the first question. There is a tendency to equate education with school education, and the inquiry into the study of efficiency of schools as firms which produce education is relegated by economists to “educationists,” just as the study of the organization and efficiency within business firms is left to engineers and “management scientists.” The central concept which serves to provide answers to the second question is the (marginal) rate of return to the investment. This rate is the rate of discount (interest) which equates the discounted sum of costs to the discounted sum of returns at the time the (incremental) decision is made. The optimal amount of a particular investment is one at which the marginal rate of return is the same as in alternative activities. A dollar transferred from an investment activity with a lower rate of return earns more elsewhere, so total income is increased.

Externalities and Public Policy

If there are beneficial external effects of education and they outweigh the excess of social over private costs, the social rate of return exceeds the private rate. If so, and if the latter is not clearly lower in education than elsewhere, there is no educational overinvestment from a social point of view.

What are examples of such externalities? It is often suggested that they include, among others, informed and responsible citizenship, communication skills, lawful behavior, and standards of health. The existence of such externalities is invoked to justify public efforts to stimulate minimal educational investments by all families. Such efforts can take many forms. It is not clear, for example, that the best policy implied by the existence of externalities is a publicly owned school system rather than direct subsidies to students. The absence of competition among schools and the vast bureaucratic machinery in public school systems is likely to foster and perpetuate inefficiencies.

Another question is the extent of minimal education implied by externalities, hence the extent of government support that is required. It is not clear that positive externalities can be attributed to mass, universal education beyond that of a general and elementary kind.

There are, of course, other reasons for public intervention, some of which also represent a response to a somewhat different kind of externality. This is the concern with the distribution rather than with the total volume of educational investments. Helping children of poor or of unloving parents to acquire a minimal degree of earning power is an objective for which schooling is viewed as an instrument. Private charity is not a dependable alternative, since it carries externalities as well: charity of givers is likely to reduce the giving of others, though it may induce the giving of some. Since poverty is viewed as a relative concept, the amount of minimal universal government-supported education has been progressively lengthening as average educa-

tion (and income) have increased. It is not obvious, however, how long the span of such minimal education should be at any given time. Nor is it obvious that a legislated minimal age of compulsory and "free" schooling—it is not free, because of foregone earnings—is the best policy for a redistribution of wealth. An example of an alternative might be to provide a money-equivalent of the desired increment in wealth for each child to be used for education or training at any time and possibly for some other purposes as well. This would reduce losses in foregone earnings and wasted opportunities for investment alternatives other than formal schooling.

Nonmarket Productivity Effects

If education positively affects not only earnings but also productivity in nonmarket (household, consumption) activities, the rate of return estimated from earnings data may be understated. The most important illustration is the education of girls. Since women—on average—spend less than half as much time as men do in earning activities, it might seem that provision of equal amounts of schooling to them is wasteful, unless the nonmarket, or consumption effects are strong. The fact that more educated women tend to spend more of their time in the labor market, at the same levels of husbands' income, is consistent with the hypothesis that education increases their earnings in the market more than their productivity in the home. This finding is reversed, however, when small children are present: more educated mothers curtail their work in the labor market to a greater extent than the less educated. Whether this phenomenon represents a productivity effect of mother's education in raising children is an open question which is important and researchable.

If better educated mothers produce greater human capital in children and a better quality of family life, apart from contributing to family money income, the provision of equal amounts of schooling to both sexes need not be questioned on economic grounds. Indeed, it is rarely questioned as a matter of public

policy.

Though the real benefits to the family from educating men and women may be equal, their content is generally not the same. The relative importance of market earnings of men and of nonmarket production of women reflects a division of labor within families. Of course, the degree of specialization in family roles is not fixed across cultures or over time, though their sex linkage appears to be universal. The question for educational policy is whether it provides the appropriate preparation for the future family and occupational life of boys and girls, given the current division of labor in the family and the expected pace of change in it. The educational system tends to overlook this question, implicitly ascribing similar career expectations to both sexes, while parental models of behavior tend to impart expectations of differential roles which are likely to err in the opposite direction. A better understanding of the functions of the family, of the division of labor within it, and of forces producing change, would contribute to more realistic aspirations and preparations for the expected or desired mix of market and nonmarket activities.

As long as the family will remain a viable institution, it will continue to imply a division of labor and a complementarity in the activities of its members. The nature of the family and its production function are subjects largely outside the economist's province at this stage of our knowledge. However, secular changes in the division of labor within the family as between market and nonmarket activities have been affected by known economic forces. Economic growth due to growing productivity in industry has meant that the same amount of time spent in the labor market purchases increasingly larger volumes of goods and services than can be produced at home. This induces shifts from work in households to work in the labor market.

Since child-bearing and child-rearing are time-intensive activities, fewer children are born in successive cohorts, as mother's value of time rises in the labor market, and the

demand for outside institutions such as schools to take over the child care functions increases. At the same time, partly as a result of growing demands in the labor market, growing family income, and partly as a substitute of quality for reduced quantity of children, larger amounts (and longer periods) of education are demanded by families for each of their children.

Evidently, powerful economic forces are, at least in part, responsible for the increasingly prolonged separation of adults and of age-graded children in the dissimilar environments of home, school, and workplace. These forces are the forces of economic growth, spurred by the growth of science and technology and producing growth in real incomes. If there is a need to ameliorate some of their consequences, it is not a call to stop economic growth.

Is There a Problem?

When we look at the massive trends in schooling in this century and in the past decades and years we wonder whether we have not been overschooling our children. Certainly, there are signals of distress coming from the young and from many concerned parents and educators.

Yet, if we view schooling as an investment process, there is no evidence that the profitability of that investment has declined as numbers of students have grown. The private rate of return to schooling has remained roughly constant around a respectable 10 percent figure (with deviations depending on data and analysis) in the past three decades. This figure, as usually calculated, necessarily omits externalities and consumption effects, so it is probably understated. Evidently, during most of this period demand for educated labor has been rising in step with its supply.

It appears that in the past few years this happy conjuncture has given way to a surplus of supply in the markets for highly educated labor, particularly in the sciences. Rates of return calculations do not immediately capture these changes, since relatively long

streams of earning experience (at least a decade) are required for the calculation. Even if we imprudently ignore these latest, and hopefully transitory developments, we must keep in mind that the calculated rate of return is an average over the student population, which conceals a wide dispersion. This means that for, say, 20-30 percent of students at any level, the additional schooling has been a waste at least in terms of earnings. Assuming no change in the fraction of failures, and assuming that the distribution of results is reflected in attitudes even before graduation, the distress is more strongly felt and expressed today than in the past, because the student population is older therefore more articulate, more educated therefore suffering a greater loss from overschooling, and much more numerous, therefore more visible.

It should also be noted that when the overall schooling level was lower, the inability to obtain further education was the source of distress of many people. Only the privileged few continued schooling for prolonged periods. The locus of unhappiness was diffuse, outside of school. When few do not go on to higher levels of schooling, it is the reluctant or "captive" student that is unhappy, and the distress is strongly concentrated in schools.

Labor Market Developments

The high and stable rate of return to schooling in the past decades is not safely extrapolated into the future. To begin with, the greatest expansion of high school completion and post-high school enrollment took place in the past twenty-five years, in a period of seemingly insatiably growing demand for educated labor, and in a period demographically favorable to the young in the labor market: young people age 16-24, constituted a declining proportion of the total labor force until quite recently. Most recently job opportunities and starting relative wages of college graduates have begun to decline in some fields. It will not be clear for some time whether this phenomenon is of longer-run significance beyond the recent sectoral and busi-

ness cycle decline in demand.

One disturbing index of conditions in the more general youth labor market throughout the sixties has been the rather high unemployment rate, which has actually risen in the past decade both absolutely and relative to the unemployment rate of the adult population. The fact that the unemployment rate of young people is higher than that of adults is not surprising. Entry into the labor force and job-shopping during the early years of work experience are reflected in high unemployment counts. This is certainly true of the 16-19 age group and somewhat less so of the 20-24 group.

There are several additional factors which contribute to the size and growth of the unemployment rate in the young population groups. First, the number of students working seasonally (in the summer) and otherwise part time has increased greatly. The large turnover—between work and school—is associated with unemployment. As the proportion of students and of student job-searchers grows, this component of unemployment increases in importance. Indeed, about 75 percent of the unemployment observed in the 16-19 group is associated with entry and re-entry into the labor force. Second, the young people in these age groups who left school have progressively shorter work experience, since the successive cohorts graduate later. Higher unemployment is typical of less experienced workers, so growing unemployment is the statistical reflection of diminishing experience in (fixed) young age groups.

None of these factors represent obvious distress. A worsening of employment conditions should be reflected in the duration of unemployment. But the duration of youth unemployment is short (most of it is less than six weeks), and has not increased together with the rate (except in recessions). However, some of the effects of unemployment may not show up in duration to the extent that lack of success results in dropping out of the labor force back to school or to other activities not in the labor market.

One factor which adversely affects the condition of young inexperienced workers in the labor market is the upward trend in minimum wages. Most 16-19 year olds are employed at or below minimum hourly rates. Each successive hike in the minimum wage, relative to the general wage level, and the progressive expansion of coverage reduces employer demand for inexperienced, initially low productivity workers.

The particularly bad effect of minimum wage hikes is that they limit the opportunities for training or learning on the job. Apprentices and informal learners must accept initially low-paying jobs—their lower wages reflect not only lower productivity but also the costs of training which the firms provide, formally or informally. The minimum wage blocks this route to advancement and forces a detour via more school learning, at best.

Not all of those prevented from job experience at young ages stay longer at school. According to empirical analysis of minimum wage effects, the labor force participation rate of nonstudents has also been adversely affected. What happens to the double drop-outs (out of school and work) may be guessed, but is not well documented.

The increasing tendency of bypassing relatively unskilled work experience via schooling is, of course, strengthened by the growth of public subsidies to universal schooling at progressively higher levels. The minimum wage hikes (and draft policies in the recent past) are additional factors producing a growing number of reluctant students. To some extent the growth of a (largely seasonal) and part-time student labor force represents an attempt to overcome the growing confinement of youth to schooling and the growing postponement of economic and personal independence.

In Conclusion

If a social problem exists, its universality is probably overstated by the tendency of observers to focus on the more visible segments of the population. The analysis available to

economists does not suggest any obvious persistent economic malfunctions in the growth of schooling. The rate of return to schooling appears to be reassuring thus far, though the average certainly conceals distributional problems, and the most recent developments are not clearly reflected. The review of youth labor market conditions does reveal some symptoms of distress, though the size and trend in the unemployment figures tend to convey an exaggerated picture of it.

One large area of ignorance makes the economic analysis far from complete: This is the question of efficiency of the educational production function, the effects of its "industrial," curricular, and pedagogical organization. The observed rate of return does not tell us whether activities which produce education could not be more efficiently organized. Economists are only now beginning to take an interest in studying the educational production function. Much of the interest, however, centers on the production function within schools, yet education is a much broader concept than schooling.

Once *educational* purposes or functions are defined, the place and nature of *schooling* as one of several (alternative and/or coexisting) institutions can be envisaged, in the light of changes in technology and in society.

Broadly speaking, education of the young involves transmission of knowledge, socialization, identification and encouragement of talent, preparation for work and orientation toward future personal, household, and public responsibilities. It seems obvious that much, perhaps most of these purposes cannot be achieved in the traditional classroom. Group or individual learning should depend on function and on available technology. Acquisition of social skills, and participatory activities such as sports, arts, and recreation require social, though not necessarily age segregated environments. The same is true of the acquisition of information about and experience in a variety of work activities. The management of households, of health, of family finances are matters of social and individ-

ual learning. At the same time, the acquisition of intellectual knowledge through reading, listening to lectures, and writing can be pursued individually, without fixed schedules, and at the student's own pace. Certainly, present day technology should make the best teaching and teaching aids available to all students. Of course, provision must be made for feedbacks in form of discussions, testing and guidance.

The institutional settings need to be envisaged and experimented with. It is not a matter of reversing trends and of somehow

bringing the workplace to school and family, or any two of these institutions to the third. The progressively shrinking family, the increasingly abstract occupations, and the existing schooling which at best prepares for further schooling cannot simply be conjoined and revitalized for the education of the young. The new institutions will have to provide direction and guidance for all the functions, whose loci may well be diffused according to needs and technology, while providing maximum autonomy and variety for individual growth paths.





