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The Failure of Education as an Economic Strategy

By Lester C. Thurow*

Arthur Okun wrote *Equality And Efficiency: The Big Tradeoff* in 1974. The book focused on the tradeoffs between tax-transfer systems and the work or savings incentives necessary for economic growth. If society wished more equality it faced a "leaky bucket" where the amount given to the poor was inevitably less than the amount taken from the rich.

If the book had been written ten years earlier, Okun would not have focused on the "big tradeoff." The conventional wisdom (circa 1964) held that any society could have both more output and a more equal distribution of output if only it invested in more education—human capital. If a more equal distribution of education was pumped into the economy, the economy would automatically pump back a more equal distribution of earnings. As educational gaps diminished between blacks and whites, or men and women, earnings gaps would similarly disappear. The War on Poverty and Great Society programs as they were conceived by Presidents Kennedy and Johnson were based upon education—not tax-transfer—strategies. With more education, higher earnings for the poor would mean higher, not lower, incomes for the rich.

Strangely, *Equality and Efficiency* says nothing about education. The only reference to education is a brief discussion of the Yale Plan where tuition loans could be repaid based on future earnings rather than some fixed repayment schedule. Nowhere in the book does Okun justify his association of equality with the tax-transfer system on the grounds that education empirically failed to deliver what was earlier promised. Without argument he just assumes that the tax-transfer system is the only way to get a more equal distribution of income. Between the mid-1960's and the mid-1970's, I am unaware of anyone who was advancing the

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argument that education had empirically failed as an economic strategy for generating both growth and equality. Yet Okun was not alone in ignoring education. Without explicit discussion, education had ceased to be seen as a viable economic strategy by almost everyone.

Intellectually it is interesting to speculate as to why equality, which was so closely associated with education in 1960's, came to be just as closely associated with tax-transfer systems in the 1970's without any hard analysis that would have forced the shift in strategy. Perhaps it had something to do with the public's disgust with education flowing out of the student rebellion of the late 1960's and early 1970's. More education was not a politically viable strategy for promoting equality and efficiency whatever its economic merits.

But more importantly, the evidence, at least on the surface, now indicates that the educational strategy of the 1960's did fail economically. The educational attainments of the labor force continued to accelerate in the 1970's, but productivity stopped growing by the end of the decade. (See the *Economic Report of the President, 1981*.) There is no educational gap between men and women who work at year-round full-time jobs (both have 12.0 median years of education in 1978), but women continue to earn 58 percent of what men earn. (See *Current Population Reports*...1978, No. 123, pp. 213; 218.) Education has been much more equally distributed since World War II, but the earnings of the top quintile rose from 19 times that of the bottom quintile in 1948 to 27 times that of the bottom quintile in 1980 (*Current Population Reports*...1968, No. 6, p. 28; No. 123, p. 271).

Why didn't education deliver the growth and rising equality that was promised?

One can quickly think of many reasons why education may appear to be failing as a strategy for promoting growth and equality

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when in reality it is a success. The positive effects of education may simply have been swamped by the negative effects of other factors. Changes in the age-sex composition of the labor force have led to a more inexperienced work force. The demand for more part-time jobs automatically leads to more low-earnings workers. Macroeconomic policies have led to more unemployment and slower growth.

I. Year-Round Full-Time Male Workers 25+ Years of Age

To insure that there is a real puzzle to be solved, look at the data on year-round full-time male workers who were at least 25 years of age between 1968 and 1978 (the last year for which detailed data are now available). This group does not suffer from unemployment, different labor-leisure preferences, sexual wage differentials, or many of the other factors that may be adversely affecting the entire distribution of earnings.

From 1968 to 1978 the distribution of education for year-round full-time male workers 25+ years of age became substantially more equal (see Table 1). Whereas the bottom quintile had 10.6 percent of total education in 1968, it had 12.4 percent of total education in 1978. Based on the proportion of total years of education possessed, the educational gap between the bottom and top quintiles has been reduced by 20 percent.

In addition there has been a substantial narrowing of the earnings differentials between educational classes (see Table 2). Over the ten-year period, the earnings of the lowest educational class has risen 7 percent vis-à-vis that of the top educational class.

Since year-round full-time male workers 25+ years of age have experienced both a more equal distribution of education and a compression in relative wages across educational classes, there should have been a substantial reduction in income inequality. *But there wasn't.*

From 1968 to 1978 the basic picture is one of stability in the distribution of earnings for year-round full-time male workers 25+ years of age (see Table 1). If anything occurred,

TABLE 1—DISTRIBUTIONS OF EDUCATION AND INCOME YEAR-ROUND FULL-TIME MALE EARNERS 25+ YEARS OF AGE[a]

Quintiles	Percent of Total Years of Education		Percent of Total Income	
	1968	1978	1968	1978
Bottom	10.6	12.4	7.4	7.5
2	17.9	18.7	14.1	13.6
3	21.0	19.1	18.2	18.3
4	21.7	22.9	23.6	23.5
Top	28.7	26.8	36.7	37.0

[a]Shown in percent.

TABLE 2—RELATIVE EARNINGS BY EDUCATIONAL ATTAINMENT YEAR-ROUND FULL-TIME MALE EARNERS 25+ YEARS OF AGE

Years of Education	Relative Earnings	
	1968	1978
0 to 8	62.9	65.1
8	77.0	78.4
9 to 11	86.5	85.5
12	100.0	100.0
13 to 15	116.9	109.5
16	153.4	139.5
17+	169.6	163.2

Source: *Current Population Reports*: "...1968 to 1978," No. 6, p. 94; No. 123, p. 213.

there was a slight movement toward inequality. The top quintile gained while the second quintile lost. But more importantly the large increase in equality that should have occurred did not occur. There is something other than a superficial puzzle to be solved.

II. Equilibrium-Price-Auction Explanations

Of all of the obvious factors (female participation rates, unemployment, part-time work) that might serve as offsets to rising educational equalities, only age remains in the data on year-round full-time male workers. But upon close examination, age cannot explain what needs to be explained. It is true that a rising proportion of young (25–35) workers with below-average earnings raises inequality. But this effect is more than

counterbalanced by a falling proportion of elderly (55 +) workers who also have below-average incomes and by a falling proportion of middle-aged (35–55) workers who have above-average incomes. If the 1968–78 shift in the age distribution is applied to the 1968 distribution of earnings by age, the age shift should have caused the total variance in earnings to fall by 0.4 percent. Shifts in the age distribution don't solve the mystery. They slightly deepen it.

The one easy explanation for what happened is also ruled out by the observed changes in relative earnings across educational classes. If the supply of labor became more equal, but the demand for labor became even more unequal at the same time, then there is no mystery as to why the distribution of earnings failed to respond as forecast. Supply-side effects were working as predicted but they were masked by unanticipated demand-side effects. The supply of college labor went up, but the demand went up even more. The supply of grade-school labor went down, but the demand went down even more. Hence the observed differentials in earnings across educational classes should have risen. Since educational earnings differentials actually fell (see Table 1), the supply-side effects were demonstrably larger than the demand-side effects. Shifts in market demands for educated labor cannot explain what needs to be explained.

Statistically there is an easy explanation for the lack of equality. The equalizing effects of education were offset by rising within-group variance in earnings. There is, after all, no wage rate for college labor of different ages. What is measured as a wage rate is simply a statistical average of a distribution of wage rates. But this observation does not solve the puzzle. It merely directs the discussion at the extremely large within-group variances in earnings—something that has been a major income distribution puzzle for a substantial period of time.

Skills acquired on the job are the standard explanation for within-education-group variance in earnings. They are also the major form of human capital other than formal education. But it is difficult to construct a plausible equilibrium-price-auction model

(workers bid for on-the-job skill training by offering to work for less than their no-training market wage) where a more equal distribution of education leads to a more unequal distribution of on-the-job skills so that rising inequalities in the distribution of on-the-job skills can offset the income-equalizing effects of changes in the distribution of educational skills. This is true regardless of whether on-the-job skills are complements with or substitutes for educational skills.

If the two sets of skills are complementary, educational skills lower the costs of acquiring or using on-the-job skills. In this case, a more equal distribution of education should have created a labor force with a more equal cost of acquiring or using on-the-job skills. Given that the costs of acquiring or using on-the-job skills have become more equally distributed, the market should have distributed on-the-job skills more equally.

This would occur unless worker's willingness (preferences) to buy on-the-job skills became more unequally distributed. But there is no analytical reason to think that a more equal distribution of education would lead to a more unequal distribution of willingness to buy on-the-job skills. There are also empirical reasons for believing that such a shift in preferences did not occur. If workers are demonstrating their willingness in the market to buy educational skills more equally, it is highly likely that they are also willing to buy on-the-job skills more equally. From the point of view of enhancing earnings abilities, workers have no intrinsic interest in education. They merely want sellable job skills. A more equal distribution of educational skills suggests a more equal willingness to buy on-the-job skills.

If the two sets of skills are substitutes, educational skills can be used to replace on-the-job skills. Here the distributional effects depend upon the initial distributions of educational and on-the-job skills. If the initial distribution of on-the-job skills is more unequal than that of education, then a more equal distribution of educational skills would unambiguously lead to a more equal overall distribution of skills. Educational skills replace on-the-job skills. With more educational skills and fewer on-the-job skills, the

weighted average distribution of skills moves toward equality.

If the initial distribution of on-the-job skills is more equal than the initial *and final* distributions of educational skills, then the overall distribution of skills becomes more unequal when educational skills replace on-the-job skills. Unequally (even if becoming more equally) distributed educational skills are replacing more equally distributed on-the-job skills. With a greater proportion of unequally distributed educational skills, the entire skills distribution moves towards inequality.

Empirical evidence would seem to point to a distribution of on-the-job skills, however, that is much more unequal than the distribution of educational skills. Any comparison of the distribution of education and the distribution of earnings shows that the distribution of earnings is much more unequal than the distribution of education. In the case of year-round full-time male workers 25 + years of age, the earnings differential between the top and bottom quintiles is 2.3 times as large as the educational differential (see Table 1). In an equilibrium-price-auction view of the labor market, this can only be explained if it is assumed that the distribution of on-the-job skills is much more unequally distributed than the distribution of educational skills.

But if on-the-job skills are more unequally distributed than educational skills, then a more equal distribution of educational skills has to lead to a more equal distribution of on-the-job skills regardless of whether educational and on-the-job skills are complements or substitutes.

Statistically it is also difficult to use changes in the distribution of on-the-job skills to explain increases in within-group variance. There is no reason why a larger supply of male 25–34-year-old college graduate laborers should lead to a more unequal distribution of on-the-job skills among male 25–34-year-old college graduate laborers.

Here again including the effects of on-the-job skills only serves to deepen the mystery. If education should be equalizing the distribution of earnings, there also should be induced changes in on-the-job skills that magnify that effect.

III. Alternative Explanations

If one is willing to move beyond the equilibrium-price-auction view of the labor market as Okun would have been willing to do, then there are some possible explanations for what occurred. Suppose that on-the-job skills are not bought in a price-auction market by individuals seeking to acquire skills where employers provide training as long as the price that workers are willing to pay for training exceeds the costs of providing it. Instead suppose employers provide training opportunities based upon current job availabilities and expected future growth in employment and that employers allocate these training opportunities based upon seniority or as rewards for good work performance in less skilled jobs. In this case, a slowdown in economic growth will automatically lead to fewer on-the-job skills and a more unequal distribution of on-the-job skills. Within each educational class fewer individuals will be receiving on-the-job skills, but those who do receive training will still be provided with the standard set of skills. The net result is a more unequal set of within-educational class on-the-job skills. With more within-group skill inequality, a more unequal within-group distribution of earnings follows.

When it comes to the existence of competitive equilibria, critics have pointed to the nonexistence of markets for making trade-offs between the present and the distant future. One can point to a similar problem in the labor market. Does the standard price-auction market for buying on-the-job skills exist? Or does one buy on-the-job skills with nonmonetary currencies—luck, good work habits, seniority? If the latter is true, what are the implications for economic behavior? It is a question that would have intrigued Okun.

IV. The Role of Government

If the failure of education as an economic strategy for growth plus equality is taken seriously, then there are a number of conclusions for the role of government in promoting equality. Basically government does not have an indirect human capital weapon for controlling the distribution of earnings. On-

the-job skills dominate the distribution of skills and the distribution of earnings. But the distribution of on-the-job training is not determined in government budgets. If one also assumes that the current political rebellion against tax-transfer redistributions continues, then government also lacks a direct mechanism for redistribution.

If both of these conjectures are true, then the United States faces not the "big tradeoff" but the "big confrontation." There are no political or economic strategies for solving the problem of equality versus efficiency in the current context. Americans, both those at the top and bottom of the income distribution, must learn to accept the current degree of inequality (or perhaps even rising inequalities if the supply siders are right). Or those Americans who are unhappy with the existing distribution must force some kind of a revolution in the structure of the political and economic system.

Not finding either of these two options terribly attractive, the real economic task is to create some new options. If the industrialized country with the most equal distribution of market earnings (Japan) is examined, it is clear that its equality arises neither from an elaborate tax-transfer system nor from a distribution of education that is more equal than that of other advanced industrialized countries (see Malcom Sawyer).

Japanese equality springs from some combination of a more equal distribution of on-the-job skills and a more equal distribution of wage rates within the firm. Within the Japanese firm, there are smaller wage differences between the best- and worst-paid employees and fewer levels of hierarchy. Many of the current proposals for improving American efficiency, such as quality control circles, envolve sharp movements toward smaller wage differentials and less hierarchy. If participatory management and emphasis on building teamwork proves capable of accelerating productivity, then once again the "big tradeoff" may not exist.

The ultimate economic trick is not to make the big tradeoff or to precisely calibrate the nature of the tradeoff, but to find some economic technique, such as education was once believed to be, for avoiding the big tradeoff.

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