

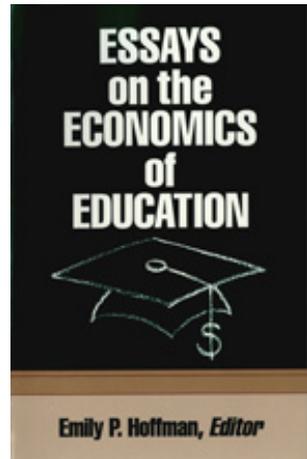
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## Introduction

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# Introduction

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As the twentieth century comes to a close, educational quality and financing have emerged as among the most important social and economic issues of concern to this nation. The Economics of Education refers to the study of how resources are allocated to achieve educational goals. Questions of equity, efficiency, and effectiveness have been addressed to all levels of formal education—from early childhood education to higher education. This series of papers by prominent economists who have specialized in educational issues brings an economic perspective to several major questions being asked of the educational system in this country and contributes to the national debate.

Three of the papers address elementary and secondary education. The thrust of the Henry M. Levin paper is to examine the educational opportunities afforded “at risk” children at the primary level and to describe an alternative approach being tested in a number of locations across the country. Eric A. Hanushek takes on the issue of whether or not equity in public support of elementary and secondary schooling will improve student outcomes. Robert H. Meyer points out that performance-based incentives for elementary and secondary schools must be carefully considered and implemented.

Two of the papers focus on higher education issues. Estelle James and Nabeel Alsalam examine the economic payoffs to various higher education choices. They address the question of whether an institution's reputation “pays off” in the labor market for individuals who graduate from it. W. Lee Hansen documents the cyclical nature of the mission of higher education as it has swung from emphases on equity of access to quality and back again.

In the final paper, Mary Jean Bowman philosophizes about the dynamics of educational policy and practice. Curriculums and instructional approaches that are state of the art today may be obsolete tomorrow. Therefore, as policymakers grapple with quality and financing

issues, they need to identify and heed the fundamental and unchanging purposes of education.

In “Economics of Education for At-Risk Students,” Levin expresses his concern over the high student dropout rates from our current school system. As a remedy, he offers and explains his accelerated schooling concept. Levin defines at-risk students as those who are unlikely to succeed in existing schools—over half of whom do not graduate—because they do not have the background on which success in that school system is based.

Levin feels that schools have taken the wrong approach in their attempts to help the weak student; he charges that the prevalent remedial or compensatory education with repetitive drill *slows* learning of at-risk students. He feels that the current system of remedial education does this by lowering the expectations of the teachers, which lowers the achievements of the students. Indeed, both the teachers and the students are stigmatized by the remedial labelling. Levin believes that failing students need to be challenged and accelerated, *not* given remedial work. Levin finds that the methods that work well with gifted students also work well with at-risk students—high expectations and stimulating material results in success for at-risk students.

Levin recommends three major changes in the American school system to allow the development of accelerated education. First, the schools must have a clear objective of bringing at-risk children into the mainstream of education, not allowing them to languish in the backwater. Second, there must be school-site empowerment. This means that the decisions affecting the operation of the school must not be passed down from a remote central administration, but must be made by those directly involved in the educational process—the school administrators, the teachers, the parents, even the students. Of course, there must be some overall system of accountability, with rewards commensurate with performance. Third, the schools must build on the strengths of the teachers, the parents, and the students—not dwell on their weaknesses as an excuse for failure.

Levin describes the Stanford Accelerated Schools Project, where the methods that he proposes have been tried. He reviews the pattern of success of these “accelerated schools,” which rely on an enrichment strategy rather than the “dumbed-down” rote repetition of conventional

remedial education. He claims that these methods result in a high rate of learning by at-risk students, citing examples of impressive gains in achievement test levels among students from the most deprived socio-economic background in schools that have adopted the methods he has developed. Amazingly, this progress was achieved by reorganizing the schools, not by increasing the expenditures per pupil.

Levin presents estimates of the proportion of students who are at-risk, and the implications of this for the future quality of our labor force. Besides the general societal benefits, Levin claims that the monetary benefits, in terms of less need for social services, combined with higher incomes and the resulting higher tax revenues, more than compensate for the costs of the accelerated school programs. He summarizes cost-benefit studies of investments in at-risk students and finds a range of \$3 to \$6 in benefits for each \$1 in cost.

If the changes Levin recommends can be widely adopted and the pattern of success can be repeated, all of us—students, parents, teachers, taxpayers, employers, every member of society—will be much better off.

In “Can Equity Be Separated from Efficiency in School Finance Debates,” Eric Hanushek contends that just spending more money on the existing school system does not guarantee improved student achievement. He tries to apply the economic concept of “production function,” which might be more familiarly known as a cost-quality or input-output approach to student performance. He shows that the concept of “equity” is not easily defined; as a result, courts, politicians, school officials, and public debate have, by default, tended to accept “expenditure per pupil” as a measure of equity. Hanushek points out, however, that unless the school system operates efficiently, there is no direct link between expenditures and results.

Hanushek has analyzed the results of 187 prior studies that attempted to relate some objective measure of student output to characteristics of the educational system that were related to costs. He finds that, contrary to conventional wisdom, “the research reveals no strong or systematic relationship between school expenditure and student performance.” His point is not that money doesn't count, but that “unless some way is found to change the districts that would squander additional funds into districts that would use them effectively, added

resources are not likely to lead to any improvement in average performance.”

Hanushek analyzes data from the state of Alabama, which ranks among the lowest in educational expenditures. Alabama has a state-wide Basic Competency Test (BCT), which allows comparisons to be made between school districts on a uniform basis. He estimates the effects of increasing per-pupil expenditures on passing rates for the BCT when controlling for sociodemographic variables (such as family background and rural/urban school district). Bringing the expenditures of all the below-median districts up to the state median level would produce almost no change in the BCT passing rates. Bringing the expenditures of all districts up to the level of the *highest* district in the state (which would bring the state up to about the national mean) would produce at most a 4 percent change in the BCT passing rates.

Hanushek offers a number of additional arguments against simply making policy on the basis of expenditure differences. First, he notes that any effort to lessen variation in expenditure is more likely to increase than to decrease the total level of expenditure. Second, there is no assurance that new funds will go to schools of poor children, since property wealth and concentrations of poverty may exist in the same district. Third, spending differences may not accurately reflect the real resources a district is able to deliver, either because of cost differences for inputs or because of differing needs of student populations. Fourth, districts spend in response to the desires of the population and to population shifts, so their expenditure levels may increase or decrease over time. Fifth, districts perceived to have superior schools will attract home buyers and “bid up” the housing prices in the district relative to otherwise identical housing in another district. Sixth, in many states, issues other than property wealth—such as local preferences, differences in student needs, curricular choices, cost differentials—determine the pattern of expenditure. Seventh, while the tax rate provides an indication of the price that residents pay to raise school funds, differences in tax rates across communities do not necessarily reflect the degree of educational equity.

Hanushek concludes that there is no easy way to improve student performance. He believes that school finance reform that focuses on achieving equal spending per student rather than efficient use of resources will not guarantee improved performance of students. He

admits that no definitive alternative seems sure to bring about improvement in the current school system. However, that is not an argument for maintaining the *status quo*. Rather, Hanushek believes that having some measure of student achievement affect educational expenditures is the route to follow. Hanushek seems optimistic about merit pay for teachers and school choice (such as a voucher system) as potential reforms worth exploring.

Robert Meyer directly addresses the issue of performance measurement in "Can Schools Be Held Accountable for Good Performance? A Critique of Common Educational Performance Indicators." Meyer argues that accurate assessment of student progress is important because administrators and teachers respond to the indications (and resulting incentives) provided by the results of the assessment instrument. He demonstrates that the traditional methods of reporting scores (typically as means or medians of entire school districts) from standardized educational tests may be misleading when used as an assessment of school performance and student achievement. He shows that using such measures as the basis for allocating school system resources (such as merit pay plans for teachers) is not generally desirable, and may even have perverse effects. In particular, these testing methods foster "teaching to the test" at the expense of "real learning."

In agreement with many other critics of large-scale educational testing, Meyer feels that the prevalent pattern of multiple-choice tests that focus on items of factual knowledge rewards rote learning, rather than higher order thinking and the development of problem-solving skills. Since traditional tests are not satisfactory instruments for determining educational achievement, Meyer wants (as do many other critics) performance-based tests that will elicit the student's ability to perform real-world tasks—for example, the road test for a driver's license. As Meyer points out, each student's educational level at a particular moment is the cumulative result of all prior schooling. Therefore, a good measure of educational achievement must not suffer from the three main defects in the traditional assessment measures: nonlocalization, overaggregation across grade levels, and contamination due to mobility. Nonlocalization results from reporting the data from too large an area (such as a school district, or even an entire state). He feels that a good assessment measure must be localized so that it can be related to the school (or even specific classroom) where the learning

occurred—or failed to occur. Overaggregation is the failure to identify what performance gains occurred at a particular grade level. Therefore, performance levels must be measured frequently. Contamination resulting from student mobility occurs when students transfer between school systems. In that case, an assessment score would falsely attribute to one school system the effects (good or bad) of another school system.

Meyer proposes reporting the successes and/or failures of the school system in terms of two related measures of performance: a value added indicator and a gain indicator. The value added indicator would measure *only* the amount a student learned in a particular class in a particular year. This immediately avoids the localization, aggregation, and contamination problems. The gain indicator would report the gain in students' educational level over a period of time (ideally, a school year) *from all sources*. Thus, the sum of all the value added indicators is included, *plus* the contribution of nonschool factors (such as the socioeconomic characteristics of the student's home and community).

Meyer presents the results of several simulations that show the effects of various patterns of student inflow and school effectiveness on student educational gain and achievement. These graphs and tables demonstrate the sensitivity of the apparent measurement of achievement to prior conditions.

In conclusion, Meyer advocates more frequent and better testing, the collection of data on student and family characteristics, and the development of better statistical models.

In "College Choice, Academic Achievement, and Future Earnings," Estelle James and Nabeel Alsalam reinforce the old maxim that the harder one works, the more successful one will be. It should be carefully noted that "success" here is measured only in monetary terms, namely, one's income seven to nine years after graduating from college.

James and Alsalam studied a sample of 1,321 males selected from the National Longitudinal Study of the High School Class of 1972 and the Postsecondary Education Transcript Study data sets. The men were interviewed in 1986, having graduated from college seven to nine years earlier. James and Alsalam used two statistical models to analyze how the characteristics of both the students and the college they attended affected earnings.

In the first model, they compared the 285 colleges that had at least two graduates in the sample. Considering only which college a student graduated from served as a good predictor of that student's future earnings. James and Alsalam then added variables to the first model that represented the initial characteristics of the students (such as high school grades, SAT scores, family income), what they studied, and how well they did in the college. This increased the predictive power of the model, but greatly decreased the importance of the specific college attended.

The second model included the characteristics (such as private/public, large/small, SAT scores of students) of all of the 499 individual colleges represented in the data. This almost eliminated the predictive power of which college the student attended. Including the variables for the characteristics of the students and what they studied and how well they performed academically again increased the predictive power of the model and greatly reduced the importance of the specific college attended.

In sum, James and Alsalam agree with Meyer in that there is both a value added and a gross output (Meyer's "gain") in higher education. What the world perceives—and generally, is willing to pay for—is the "finished product." While there is a component of indirect screening in a particular student's choice of a particular college, what the student does while attending that college—the skills acquired and/or developed—are the best indicator of future financial success.

W. Lee Hansen, in "The Financial Squeeze on Higher Education Institutions and Students: The Balance Between Quality and Access," discusses trends since World War II in the shifting emphasis between the quality of higher education and the ease of access to it. He posits that the goals of the American higher education system are influenced by many forces, both from within and from without.

A noteworthy feature of Hansen's study is that "quality" is measured in terms of financial inputs to education, not academic outputs. Accordingly, "quality" is not the amount students are *learning*, but the amount of *money spent* on faculty salaries and related instructional costs. Correspondingly, "access" here means affordability—whether or not students are able to meet the expenses of attending college.

Hansen calculates monetary proxies that quantify both access and quality. The sum of tuition plus fees, less the total amount of financial

aid, serves as the proxy for access. The sum of all instruction-related costs, adjusted by subtracting the costs of nonteaching programs (such as the extension programs of the land-grant state university systems and sponsored research projects at the major universities) serves as the proxy for quality.

As Hansen observes, scholars from many disciplines have studied patterns of change in society. He particularly refers to previous work on cycles by Arthur Schlesinger. The general tendency seems to be for society to move towards an extreme position, but to then reverse course and head for the opposite extreme, much as the swinging of a pendulum. As evidence for the cycles, Hansen presents tables that show the ebb and flow of the costs of higher education and the sources of student financial support for nine periods from 1947 to 1989.

Analyzing this data, Hansen finds long-run swings between emphasis on access (*e.g.*, the GI bill) and emphasis on quality (*e.g.*, curriculum reforms) in higher education. He finds four of these swings in the last half-century. In the first one, which ran from the late 1930s until the early 1950s, the main thrust was on access to college, with the GI bill providing the ultimate example of this. The next period, from the mid-1950s to the mid-1960s, was an era of enormous expansion in higher education. There was great emphasis on the quality of American higher education, particularly in the areas of engineering and science, brought on by the "space race" with the USSR. In the following period, from the mid-1960s to the beginning of the 1980s, emphasis shifted back to expanding access to higher education, as exemplified by the various federal student aid programs initiated in this period.

The fourth period, which began in the early 1980s and continues to the present, differs from the previous ones. There now appears to be concern about *both* access to and quality of higher education. Hansen concludes that the conflict now is over the "cost-effectiveness" of higher education, and how the costs are to be apportioned among the students and their families, voluntary contributors to higher education, and taxpayers on the local, state, and federal levels.

The most important of the trends that he found is that students and their families are being asked to pay an increasing share of the cost of higher education, rising from 26 percent after World War II to 41 percent by the late 1980s. Hansen offers two plausible explanations for this. One is that the rising demands for other publicly provided ser-

vices (such as welfare and medical care) have increasingly competed with higher education for support from government and private sources. Another possibility is that it increasingly appears to our society that the benefits of higher education (at least in the form of higher incomes) accrue more to the individual than to society; therefore, the greater beneficiary should pay a greater share of the costs.

The last paper in this collection, "The Economics of Education in a World of Change" by Mary Jean Bowman, is quite different from the preceding five. Rather than reporting on research in a particular area of the economics of education, she takes a philosophical approach, exploring more the "what" and "why" of education, in contrast to the "hows" of method and financing of the other papers.

Bowman has a long and distinguished career—indeed, when she began her studies of economics, the subject was much more the qualitative nature of political economy rather than the quantitative path that economics currently follows. Perhaps this makes her more qualified to step back—to see the forest, rather than concentrating on the trees. In trying to predict what kind of education will be most suitable to prepare for a future in which the only certainty seems to be change, it is probably better to take the longest view, rather than try to extrapolate, no matter how carefully, from the trends of the present.

Bowman's central thesis is the importance of exploring change for meaningful analysis in the economics of education. She begins with clarification of the meanings and scope in this context of "education" and "economics of education," going on to specify the kinds of change and the implications of change as they affect and are affected by education in industrialized societies.

Bowman defines education in a broad sense as "learning," which includes but is not limited to "schooling." In considering the very important, and very difficult, problem of how students can best be prepared for the future, she discusses whether general, vocational, or specialized education is most appropriate for coping with the change and uncertain expectations that seem inevitable in the future. She argues for general education, which should provide all students with a solid foundation of both literacy and numeracy. While specific curricula of vocational or specialized education may become obsolete, a sound general education will facilitate lifelong learning—the learning that occurs after graduating from school—which will provide the knowl-

edge needed in one's employment. She says, "a world of change calls for learning both within and outside of schools. It calls for general education in preparation for future learning, for specializations that can cope with change, and for both applied and theoretical learning."

Bowman considers the general learning that should take place in the home and in the preschool years to be of the greatest importance. Not only must children be prepared for formal schooling, but perhaps even more important, children must be socialized in terms of attitudes and behavior in order for them to succeed in the world. She contends that, due to deficiencies in learning in some homes and the perverse trends (such as increased illicit drug abuse) in today's society that work as disincentives to education, schools must, by default, become socializing agencies for many children.

The allocation of resources to educate children for a world that differs in many ways from the one in which we grew up involves many complex issues. While the papers in this volume do not provide answers to all of the problems, it is hoped that the application of an economic perspective will add a useful dimension to the dialogue.