Education has long been prized as a principal means to achieve equal opportunity in American society. Despite greater growth in employment and population in rural than in urban areas, socio-economic equality between rural and urban America remains an elusive goal.

Levels of rural poverty, underemployment, and schooling, plus poor housing and health conditions reflect the extent to which rural Americans continue to lag the urban population in their standard of living.

Education can help close this gap in socio-economic conditions. If this is to happen, however, education must be a vital element of any broad rural development policy of the Federal Government.

Education's a Dual Aid

A rural development goal is to improve the well-being or quality of life of rural residents, wherever they eventually reside.

Education contributes to rural development by improving the well-being of people in two ways: directly as a source of personal gratification and satisfaction and indirectly as a primary means for raising income and occupational status. The potential for schooling as a successful instrument of public policy in reducing the gaps in income and other dimensions of well-being depends on the adequacy of education in rural areas and the effectiveness of additional schooling in reducing socio-economic disparities.

Rural Education Lags

Educational levels reflected by the median years of schooling completed are lower for rural adults than for urban adults, although the gap has narrowed substantially in recent years. Among white male adults in 1975, urban residents completed 12.6 median years of school compared with 12.2 and 11.4 for rural nonfarm and rural farm residents, respectively. Rural-urban differences for white females were less.

The educational lag is far more serious for rural minorities and depressed regions. For example, black adult males in urban areas completed 11.6 median years of school in 1975, while their rural counterparts completed 8.1 years for nonfarm residents and only 5.9 years for farm residents.

In low-income rural counties in the South, the 1970 median years of school completed dipped 3 years below the national figure, and the functional illiteracy rates (percent with fewer than 5 years of schooling) were several times higher than the national average of 6 percent.

What accounts for the lower level of education among the rural population? This bears on how rural schools and public policy for education are assessed. One factor bringing down the general educational level is the long-time trend of rural-to-urban migration of many of better educated rural youth. Another factor is the disproportionate number of socio-economically deprived who live in rural areas.

Research has widely documented that student achievement is significantly determined by the socio-economic status of parents and other background characteristics of students. In short, rural and urban students having similar backgrounds differ very little in their level of educational achievement.

Therefore, we cannot assume that education offered in rural schools is necessarily inferior or that all rural students underachieve. In fact, a large body of literature documents that socio-economic background and ability of students, rather than school experiences, account for school attainment.

Nonetheless, serious problems in rural schooling are apparent. Low achievement and high dropout rates continue, particularly in economically depressed areas and among minorities. In rural Oklahoma, for example, achievement scores of eleventh grade students in the rural Northwest exceeded those of students in the economically depressed Southwest by 13 percent in 1970.

The gap between whites and blacks is wide. Research shows verbal achievement scores are consistently lower in the South than in other regions. In one study, sixth grade students in all-black rural schools scored an average of 20 on verbal tests compared with 33 for students in all-white rural schools. Comparatively, scores for sixth grade urban students were higher—25 for blacks attending black schools and 37 for whites attending white schools.

Although rural-urban differences in achievement disappear when students' social class and outmigration of better rural students are taken into account, justification for additional public investment in schooling must be based on the effect of such expenditures in increasing earnings, particularly among low-income people. That is, do economic and social benefits justify additional investments of public funds in education?
Education Payoffs

The ability of schooling to generate a flow of future earnings, if this can be clearly established, warrants the public subsidy of education. For efficient use of limited funds to promote economic growth, investments in education must return benefits in excess of costs. Even then, additional investments in schooling are indicated only if the gains equal or exceed gains from alternative investments.

Educational payoffs are realized from both individual investments by a student and family and social investments of public and private resources. A comprehensive study of educational payoff in the United States for selected years from 1939 to 1969 reveals that payoffs from public investments in education remained stable during the period despite massive increases in labor supply. Although the rate of return varied slightly by sex and race, the overall return to public investments in a college education was about 9 percent, a rate equal to typical returns on capital investments.

Payoffs to individuals from investments in a college degree ranged from 14 percent to 20 percent for different race and sex groups in 1969. Returns to both public and private investments were higher for elementary and secondary schooling than for college.

The economic payoff from higher education tends to be low for persons residing in depressed areas. A 1960 study of low-income rural counties in the South indicated that schooling above the elementary level had a low payoff for persons living on farms. At that date, schooling above the elementary level may not have been a profitable investment for many youth who remained on farms.

Education Impact on Income

The role of education in rural development is placed in clearer perspective by its impact on income. This is illustrated by the gaps in average earnings in each of four categories of rural residents (figure 1), compared with urban male earnings (figure 2). These gaps are due to education, sex, race, and residence differences. Education refers to median years of schooling completed.

White rural males lag white urban males in median schooling by only .4 years, but by $1,000 in average earnings. Of the lower earnings, an estimated 40 percent is due to quantity of schooling and 60 percent to residence-related factors such as age, job opportunities, and quality of education.

Black rural males earn $7,400 less than white urban males. One-third of the discrepancy is due to fewer years of schooling, 22 percent to lower earning power in rural areas, and 45 percent to factors associated with race. On the other hand, 60 percent of the income differences between black rural and urban males can be explained by differences in education. If, therefore, the influence of racial differences were eliminated, increased schooling of both rural and urban blacks would be more economically warranted.

White rural females lag urban females substantially in average earnings. Furthermore, sex differences account for 75 percent of the $7,600 lower income from that of urban white males. Twenty-four percent is attributed to residence and only 1 percent to schooling differences. The relative importance of sex differences is largely the result of traditional female occupational roles, limited job opportunities, and discrimination.
Figure 2

Earnings, Persons Age 25 or Older, 1973

<table>
<thead>
<tr>
<th>Urban Male</th>
<th>White</th>
<th>Black</th>
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<tbody>
<tr>
<td>11,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8,200</td>
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<tr>
<td>Female 5,800</td>
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<tr>
<td>4,900</td>
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<tr>
<td>Rural Nonfarm Male</td>
<td></td>
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<tr>
<td>10,500</td>
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<tr>
<td>4,100</td>
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<tr>
<td>Female 3,900</td>
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<td>2,100</td>
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*Rural black females* have the lowest earnings. Increasing their years of schooling to that of urban black females would raise estimated earnings $1,200, a sizable percentage gain. Earnings are $9,400 below that of white urban males, with 13 percent accounted for by less schooling, 17 percent by lack of earning power in rural areas, and 35 percent each by race and sex.

Thus, the extent to which additional education can directly alleviate income gaps varies substantially among different segments of the rural population. Increasing the quantity of education can significantly reduce the relatively small gap between rural and urban white males. For females and for black males, additional education, by itself, may have limited effect in reducing the larger income gaps that exist. Policies to close such gaps must focus on sex and race equities in jobs and on job creation in depressed rural areas, as well as increased funding for education.

**Education Impact on Employment**

Education impacts on community as well as individual employment and income. This impact is partially apparent in industrial firm location decisions.

Numerous studies have reported that local markets, labor, raw materials, and transportation are factors of prime importance to managers in selecting a community location for industrial plants. None of the studies specifically listed "good schools." Indirectly, however, education is an important factor as managers presumably are interested in the quality of labor (influenced by schooling) as well as the quantity.

One study of manufacturing plant location in rural communities in Kentucky revealed that higher educational outlays increased the chances of a plant locating in a given community. A $161 increase in annual expenditures per pupil increased the chances of firm location as much as access to an interstate highway. In a study of southern communities, educational attainment was higher in counties with high per capita income. However, communities with rapid growth in incomes had lower mean educational levels.

Communities also can benefit educationally from in-migrants who have more education than the local population. A principal motive for firms to locate in rural areas is to lower production costs. Typically this includes the use of low-cost labor from among the local population. However, some workers commonly are attracted from outside, particularly in supplying skilled labor and administrative talent.

Those moving into such communities generally have more education than the local population. Data on schooling among migrants, 1970–75, reveal, however, that more movers from rural to urban areas had a college education than of movers from urban to rural areas. Hence, equal numbers of movers in both directions would transfer human capital (in the form of educational investments) from rural to urban areas. But lower schooling costs in rural counties and substantial migration into rather than out of rural areas since 1970 mean the net flow of human capital is now into rural counties, a marked contrast to earlier decades.

**Appropriate Program Mix**

What kinds of programs are needed in a rural development strategy; to what degree should educational programs be emphasized?

Several studies have focused on efforts to determine the appropriate level and mix of public programs to alleviate problems of depressed rural areas. Researchers evaluated or simulated the impacts of various welfare, job development, and education programs on reducing poverty and underemployment in an Oklahoma economic development district.

To alleviate poverty and underemployment over a 15-year period would require an estimated 40 percent in-
crease in development funds. Because of the large number of unemployable poor, most of the funds would be for welfare payments to the poor. Although a labor program to assist the movement of workers to jobs outside the district was the most economical program to alleviate underemployment, many relocated workers return to unemployment in their home community. Consequently, the key to eliminating underemployment was development programs to promote local job creation (through Federal tax write-offs of corporate profits) coupled with incentives to hire disadvantaged workers. Education programs and vocational technical training, while not costly, had little impact on poverty and underemployment.

Other research at Oklahoma indicated a key role for industrialization. With a given budget for development, programs that emphasized job creation through industrialization reduced unemployment and poverty and raised employment and per capita income. The least favorable outcomes arose from allocating funds strictly for human resource development programs. Most successful, however, was a mix of programs that stressed industrial development programs but also allocated up to 50 percent of development funds to education. Thus, human resource programs work best when accompanied by programs to provide jobs locally or to help workers obtain jobs outside the area.

A conclusion from the Oklahoma examples is that job development influences schooling more than schooling influences job development. The level of education in the population improved because the demand for better schools grew from an influx of better educated outsiders with more income, higher socio-economic status, and a broader perspective, and from a rise in incomes among natives.

Thus, interaction of job development with human resource development constitutes the whole of economic progress in rural development. Rural development is an interactive process, and sole emphasis on improved schooling as a solution to problems of rural poverty and underemployment can have disappointing results. In fact, studies in North Dakota and Indiana demonstrated that in-school experiences had little effect on school achievement compared to factors outside the school.

Nonetheless, public investments that improve the quantity and quality of education are strongly warranted; making schooling more equitable depends in no small part on changes in school financing.

Improving Rural Schools

The questions are how should dollars for education be spent and where should they come from? Research on the effects of specific educational practices on student outcomes generally shows that no one practice is universally effective, although smaller classes, higher teacher salaries, and summer programs for students have been successful in some instances such as with the educationally disadvantaged. Improvements that are effective and efficient are often unique to local circumstances, and it is difficult to specify practices that should be universally pursued.

Funding Equity Needed

Adequate funding is important to a number of improvements in educational quantity and quality. Many rural schools are too small to realize economies of scale; thus school consolidation in rural areas can sometimes free resources to finance school improvements. But the issue of financial support deserves further treatment. Funds can be distributed with greater equity and efficiency to overcome existing inequities.

Inequity Among Income Levels. Research in Oklahoma demonstrated that combined local, State, and Federal taxes supporting schools were nearly proportional to family earnings and in effect redistributed income from the rich to the poor. Public expenditures and taxes averaged $216 and $109 for families with incomes of $2,000 to $3,000 per year and $281 and $551 for families with incomes of $10,000 to $15,000. The poorer families received a net transfer payment of $107 and the richer families experienced a net tax of $207. Considering the high payoff on elementary education expenditures, benefits based on actual earnings distributed income even more favorably toward lower income families.

Schools have promoted income equality as an increasing proportion of youth from low-income families have finished schools.

Geographic Inequity. Migrants from rural areas are often attracted to high-income areas, resulting in geographic displacement of the wealth represented in their educational investment.

The impact of such displacements on the willingness of local people to support schools is a real concern. Low social payoffs from school investments discourage State and local funding; local benefits are reduced relative to costs. Unless State funding formulas mandate local effort, net outmigration of residents can reduce local effort to
fund education. The case for compensation of geographic displacements of educational investments rests quite securely on equity grounds and less securely on efficiency grounds.

**Funding Sources Compared**

A California court decision against the property-based State school finance system and subsequent events have promoted a re-examination of school funding in many States.

Public schools usually receive about half of their funding from local sources, two-fifths from State sources, and one-tenth from Federal sources. Discontent with school financing focuses primarily on the local property tax, which provides about four-fifths of locally financed school revenues. Compared with poor districts, wealthy districts provide more revenue per student with less tax effort as measured by tax rates. Because their real property values are large relative to income, farmers are hit especially hard by property tax.

Oklahoma's example sheds light on sources of inequality in school funding through State aid that is allocated by a grant system designed to equalize total school funding among districts. Compared with equal State aid per student, actual State aid reduced inequality in total funding per student by nearly one-third. Equalization of local funding per average daily attendance would have reduced the inequality in actual total funding by 4 percent.

Federal aid covered a variety of special programs for disadvantaged and exceptional children, and for districts impacted by military installations. While Federal aid should reduce inequality in school funding by providing more funds per student in low-income rather than high-income districts, Federal funds actually increased inequality in Oklahoma.

Equalizing Federal funds on the basis of average daily attendance would have reduced inequality in total funding by 12 percent. No attempt was made to determine the specific Federal programs that contributed to inequality, but a likely candidate is Federal impact aid.

In Oklahoma, the ratio of tax assessment values to market value of farm property is far lower on farm property than for residential, commercial, and industrial property.

Yet, inequality in local funding was estimated to increase if all property were assessed at the same ratio. Districts with much farm property generally have a large property base, thus, providing substantial local funding, even with low assessment ratios. Merit exists, therefore, for State collection of property taxes based on a uniform ratio of tax assessment to market value, followed by allocation of revenues to districts in equal amounts per student.

A problem with any approach based largely on taxation of real property is that ability to pay is a function of human resources and financial assets, as well as real estate. In the absence of willingness or ability to tax all forms of wealth, inability to pay may be more appropriately measured by income. Because farmers have lower ratios of income to real property then do other groups, they have a major stake in school funding equalized according to income rather than property.

In summary, the school funding issue has been studied at length for Oklahoma as well as other States. Most studies call for no more than equal funding per student, adjustments in property assessments to reflect market values, and comparable millage rates on market value across property classes, districts, and the like. But it is impossible to be enthusiastic about such tinkering with the current system while continuing to view real property as an adequate measure of ability to pay, ignoring displacements, and viewing equal outlays per student as a worthy goal, regardless of need.

An obvious answer is full State and Federal funding of schools, drawing especially from income taxes. Local districts would pay transportation costs and supplement school funding in other ways. A formula could be established, for example, to reduce State and Federal funding 75 cents for each dollar of local supplement.

One estimation is that equitable funding of public schools would require 30 percent of funds from Federal sources. Achieving this level of Federal funding is difficult at a time of wide concern about government spending. If, however, the role of the Federal Government is to assist investments that (1) have favorable economic payoff, (2) extend across local political boundaries, and (3) depressed areas cannot afford without undue sacrifice, a case can be made for gradually earmarking a greater portion of general revenue sharing funds for education. To do so would expand the role of the Federal Government in public education but result in greater equity in the distribution of resources to meet educational needs, particularly in rural areas.

**Suggested Reading**

Elaboration of the topic discussed in this article and a comprehensive list of references are included in a paper by Dr. Tweeten, but can be obtained in either microfiche or paper copy from ERIC Document Reproduction Service, Computer Microfilm International Corporation, 3030 N. Fairfax Drive, Suite 200, Arlington, Va. 22201.