

Education and the Labour Market

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The several purposes of education have received differing emphases over time. Both as a consequence and a cause of the development of human capital theory, the weight given to the economic dimension of education has grown. Education has widely come to be seen as an aid to the achievement of individuals' economic ambitions and/or national economic and social objectives as determined by the state. This has been the case in educational debates in both the less developed countries (LDCs) and those developed countries where large numbers of young people and members of particular racial and social groups are unemployed.

The relationships between education and employment are many and cannot all be covered in one entry. Here the stress is on the educational characteristics of individuals and the characteristics of the jobs they enter (or fail to enter). In the first section, the evidence from both developed countries and less developed countries of the close associations between age, educational background, occupational status, and earnings from employment is very briefly described. How school leavers become absorbed into the occupational labour force is the subject of the second section, which discusses some of the many theories of the labour market and the role played by the public sector. Much of the controversy between different theories of labour markets centres around interpretations of the demand side. In the third section some brief comments are made concerning the supply of educated labour (or the demand for schooling) and the attempts which have been made to explain and predict this supply. Finally, some aspects of youth and school-leaver unemployment are discussed. While much of the debate on the issues in this section has been conducted in the context of the less developed countries, the recent increased levels of youth unemployment in the United States and Western Europe make it increasingly relevant there.

1. Age, Education, Occupation, Earnings

Education, occupational status, and earnings from employment have been shown in a wide range of studies to be positively associated in countries adopting many different types of socioeconomic system and at different levels of economic development. Earnings functions and path analyses of the effect of individuals' background characteristics on occupational attainment and earnings have invariably indicated that while much of the variance remains unexplained, the largest single indicator is education. Jencks et al. (1979) for instance, utilizing a considerable amount of data for men aged between 25 and 64 years in the United States, concluded that the number of years of education is the best single predictor of the eventual occupational status of a labour force entrant. The results of similar (but less soph-

isticated) studies in a number of less developed countries show the same findings, generally even more strongly. Turning to earnings, Psacharopoulos (1975) has demonstrated that for the Organisation for Economic Co-operation and Development (OECD) countries, average annual earnings of secondary- and primary-school leavers show a differential of 40 percent, while higher-education graduates receive on average 77 percent more than secondary-school leavers. In the less developed countries, the differentials are much wider (Hinchliffe 1975).

Of interest to both individuals and the state is the relationship between the additional earnings associated with education and the cost of acquiring them. This is measured through rates of return arising from the resources used in education. International comparisons of rates of return demonstrate, in particular, two patterns: (a) returns are larger at lower levels of education, and (b) returns are larger in low-income than in high-income countries. In addition, as a result of the significant elements of public subsidy in educational provision, the net benefits to the individual are invariably greater than the social ones. This is particularly marked in low-income countries at the higher levels of education.

Empirical studies of the interrelationships between education and earnings have usually included a third variable, age. Age-earnings profiles demonstrate that for all educational levels, earnings rise with age up to a maximum and then level off. Further, the higher the educational level, the steeper the rise in earnings. The result, for both developed and less developed countries, is that while average earnings in wage employment vary significantly by educational level for all age groups, they do so most prominently in the older age group. Another general finding is that the distribution of earnings at each educational level is wider for older workers, particularly for those with higher education. Finally, increments of age and education also appear to have different effects depending on type of occupation, with both being larger for professional than for manual workers.

Earnings functions and rates of return on educational investment which have been calculated in the less developed countries have largely been restricted to observations of individuals in the formal wage sector. While this sector is the one entered by the majority of those with higher levels of education, the rural and urban informal sectors still contain most of the labour force, and even most recent school leavers, in many countries. Detailed studies of the relationship between education and earnings in these sectors are few. A recent review of 18 surveys in 13 countries relating the educational level of farmers to their productivity, however, has suggested that four years of schooling may be capable

of increasing productivity by around 10 percent a year (Lockheed et al. 1980). Surveys of urban informal sector workers in, for instance, Nigeria and Colombia have similarly demonstrated a positive association between education and earnings. Such studies, however, have usually omitted consideration of other possible earnings-related factors.

Summarizing, the large amount of empirical investigation into the relationships between education, occupation, and earnings from employment which have been conducted since the 1960s in both high- and low-income countries have resulted in two major findings. The first of these is that the main criteria used by employers to recruit new entrants into the occupational structure are level and type of education. To formalize this, minimum educational entry requirements are generally set for each occupation. Second, there is a very close correlation between an individual's educational attainment and his or her level of lifetime earnings. Explanations of these observations, however, vary widely. Each is based on a different theory of the operation of labour markets.

2. Education and the Labour Market

Explanations of the interface between individuals with specific educational characteristics and the nature of the jobs they enter are each one part of more general theories of labour markets. In this section, the different interpretations of the empirical conclusions presented above are discussed.

Three major approaches may be identified. First there is an approach grounded on the argument that the educational system itself operates in such a way that it directly adds to an individual's cognitive abilities. These abilities range from basic numeracy and literacy at one end of the scale to a greater capacity for logical and analytical reasoning at the other. These increased abilities lead to higher individual earnings. A second approach also maintains that schools are effective in changing a person but that the important changes are not those of cognitive abilities. Class background is here seen as the major determinant of occupation and income and the educational system is said to operate in such a way that it develops different sets of productivity-related personality traits among children from different social classes. This both legitimizes the distribution of jobs, which simply perpetuates the existing structure of social class, and also increases the productivity of all classes in their ascribed occupations. Traits produced by schools in those individuals who will fill low-paying jobs include punctuality, obedience, and respect for authority, while those for high-status occupations include self-reliance and the ability to make decisions. Finally, there is a set of approaches which directly questions the view that through the development of either cognitive abilities or personality traits, schools increase the potential productivity of individuals. Rather, the educational system is said to act simply as

a selection mechanism to sort out those who possess nonschool-related characteristics, such as intelligence and motivation, which are in some way connected to productivity. Schooling itself does not affect productivity.

These views of education are further discussed below in the context of the wider labour market theories to which they are related.

2.1 Neoclassical Theory

In orthodox neoclassical economics the theory of the labour market is based on the marginal productivity theory of demand, reflecting the profit-maximizing behaviour of employers, a supply theory based on the utility maximization of workers, and the notion of competitive equilibrium. Following on from the composition of demand for goods, individual firms derive a demand schedule for labour (relating amounts of labour demanded to different wages) and labour is employed up to the point where marginal productivity is equal to the industry wage. In early models, labour was regarded as homogeneous. With the development of human capital theory homogeneity is no longer assumed and labour demand has come to be interpreted in a set of markets each with a demand for specific productivity determining worker characteristics, with education and training being the most important. In response to these, individuals are assumed to compare the costs of acquiring the relevant characteristics with the increase in earnings which they can expect from them. As a result of these comparisons individuals invest in themselves and the aggregation of these decisions determines the supply of human capital. If the demand for productivity-determining characteristics exceeds the supply at a given wage rate, this will then rise and in turn supply will increase and demand fall. Conversely if supply exceeds demand, the wage will fall and employment increase. According to human capital theory, then, the labour market is capable of continually absorbing workers with ever higher levels of education provided that education-specific earnings are flexible downwards and the labour market is a single continuous one. This approach to the operation of labour markets may be termed the wage competition model.

Since the early 1970s a wide range of labour market theories has been developed at variance with the orthodox neoclassical/human capital school. The theories have emerged largely in response to a number of empirical observations of the United States labour market, which have been said to be at odds with the implications of orthodox theory. These include the persistence of poverty and income inequality, the failure of education and training programmes to raise the incomes of the poorest groups, continual upgrading of the qualifications required for jobs, continuing discrimination against sections of the labour force, and widespread worker alienation (Cain 1976). The interpretations of labour market functioning which have come to compete with orthodox theory may be divided into labour market

segmentation and job competition models. Each of these contains variants and there is often a degree of overlapping between variants of all three theoretical approaches.

2.2 Alternative Theories

Segmentation models are discussed in detail elsewhere. Essentially it is argued in these models that the labour market is characterized by a number of segments, each of which has different conditions of employment and recruits from among separate sections of the labour force. To some theorists the types and number of jobs in each segment are determined by technological requirements; to others segmentation occurs as the result of conscious actions by capitalists to divide the working class and reduce class consciousness. The latter view has two implications for education. First, educational expansion among those groups consigned to the secondary labour markets characterized by low pay, insecurity, and poor working conditions will not lead to increased earnings. Second, this view links up with the approach to education described above, which argues that the role of the educational system in capitalist society is to reproduce existing class relations by legitimating the stability of intergenerational occupational status and developing different sets of personality traits among different groups in society necessary for a hierarchical occupational structure. The technological interpretation of segmented labour markets has features which tend to run into this rather conspiratorial approach but also shares some of the arguments associated with the job competition model, which is concentrated on in the remainder of this section.

The third view of education described earlier argues that schooling merely acts as a screening device which helps employers to choose between people who have very different capabilities and compete for a small number of jobs. In this view, educational credentials are essentially signals which indicate the varying levels of "raw" intelligence, motivation, and so on, which affect future productivity or "trainability". These credentials may accurately predict future work performance but they do not directly add to it. Several attempts have been made to describe in detail the interrelations between schooling and the labour market based on this simple concept of screening. One of the most widely discussed is the job competition model associated with Thurow and Lucas (1972) and developed by them to counter the wage competition view of the United States labour market.

The job competition model is based on the uncertainty which surrounds the hiring of labour. Given the problems of accurately predicting the future performance of job applicants and the fact that most job-specific skills are learned on the job, the employer uses educational qualifications as a proxy for those characteristics which facilitate training. In the model, two sets of factors determine an individual's income. One set determines the job structure in the economy

and the other an individual's relative position in the queue for jobs. Job structure is regarded as technologically determined and a central feature of the model is that productivity is seen as an attribute of jobs rather than of people. Consequently wages are based on the characteristics of jobs rather than the characteristics of people in them. Workers are distributed across job opportunities according to their position in the queue.

Potential workers come onto the labour market with a variety of background characteristics, the most important of which is amount of education. While these are insufficient to allow the worker to immediately perform in the production process, they do affect the cost of training, which is usually acquired formally or informally on the job. Potential workers are then ranked in a labour queue according to their expected training costs. Based on such a queue, jobs are distributed with employers offering high-productivity jobs to those at the head and working down. In contrast to the wage competition model, which sees the labour market as a market for matching demands and supplies of job skills, the job competition model sees it as a market for matching trainable individuals with training ladders.

Given the variations in skills required over the job structure, the amount of training will vary between jobs. Once a worker has landed a job and received the training to raise his or her productivity to that of the job, the time required for further training for a higher productivity job is likely to be less than that required for someone recruited from outside the firm. As a result, highly structured internal labour markets develop within the firm. As Blaug (1976) argues, it is the addition of the concept of internal labour markets to the simple screening effect of schooling which is used to counter those critics who argue that screening can account, at most, for education-related differentials in starting salaries but not for the often stronger correlation between schooling and earnings which continues through working life.

The theories of job competition and screening, in their various forms, have important implications for educational policy. As high-productivity jobs become scarce, competition to get to the head of the labour queue intensifies and the amount of education required increases. A leapfrogging process develops whereby the demand for education by individuals increases the more difficult it becomes for each education group to secure jobs. The effect of educational expansion is neither a fall in occupational wages nor an increase in jobs. What does result is that educational qualifications for jobs lower in the hierarchy rise and the more highly educated are then recruited to jobs that would have been filled in the past by the less educated. While the surplus of a particular educated labour group does not affect occupational wage levels, it does result in a lower average wage for the group. However, since the "bumping" process, once triggered, will extend right down the occupational ladder, wage differentials and hence the

incentive to acquire further amounts of education may not decrease. However, if jobs are performed no differently by those with different levels of education, the social returns to this educational expansion are zero. If, on the other hand, all job entrants are not perfect substitutes in this sense and either levels of productivity within particular jobs can be affected by the individual or training costs do vary between individuals in line with their educational qualifications, the social returns to investment in education may be positive. In this case the returns result more from an occupation selection mechanism than from an increase in the quality of labour.

2.3 The Public Sector

The labour market theories into which the various views of education have been placed have been formulated essentially for analysing the labour markets of developed market economies. In the labour markets of the less developed countries there are two major differences. Employment in the formal wage sector is very much proportionately smaller and within this, the public sector has a more important place. It is this dominant role of the public sector in the less developed countries which has often been used in the argument that the job competition model is even more appropriate to use in these countries than the wage competition one. In virtually all less developed countries, the public sector is the largest single employer and for secondary-school leavers and above, the majority employer. Public sector employment is strongly sought not only for the level of wages offered—which while offering large differentials at the highest levels may be below those in the private sector—but also for the long-term security. Wage levels in the public sector are set administratively by commissions sitting every few years and the criteria adopted rarely allow supply factors much influence. The result tends to be inflexibility with respect to wage levels and differentials. In addition, in order to appear impartial and as a way of coping with the selection of recruits from a large number of potential applicants, emphasis tends to be predominantly placed on formal educational qualifications for recruitment. As a result of both these factors, the problem of surpluses of educated labour is not resolved by wage changes (as implied in the wage competition model), but is rather thrown back onto the educational system to solve by continuously expanding qualifications (as implied in the job competition model).

3. The Demand for Schooling

The job competition model and its variants offer rival interpretations of the demand side of the labour market to that offered by the human capital or wage competition school. They say little, however, that disagrees with the human capital interpretation of the supply side. Both wage and job competition models reject the earlier view of education as consumption and adopt the position that the demand for postcompulsory levels of education is

related to the direct and indirect costs of that education and the earnings differentials associated with it. The notion that earnings forgone are perceived by potential students to be an important part of the private cost of education and that they make a careful assessment of future alternative earnings patterns before deciding whether or not to acquire more education is widely shared. According to Blaug (1976), the hypotheses resulting from this position come in two versions: first that total enrolments can be predicted by relating private costs to future expected benefits (i.e., by calculating expected rates of return) and second, more ambitious, that enrolments in specific fields of study can be predicted.

Despite the hypothesis that the demand for schooling can be predicted by private cost-benefit considerations being central to human capital theory and shared by many who criticize other aspects of the approach, Blaug has demonstrated that attempts to prove it have not been particularly successful. Early attempts made in the late 1960s to estimate the demand function for higher education in the United States tended to regress some measure of enrolments on household income and direct education costs while including neither forgone earnings nor measures of expected future earnings. In other words, the tests were more those of the consumption explanation. Later work turned away from total demand and towards the demand for specialized areas of study. Freeman's (1971) work on engineers and scientists is an example and one which appeared to bear out many of the predictions of human capital theory. A major drawback to this study, however, was the use made of starting salaries as a proxy for lifetime earnings, with the result that the hypothesis that students do take a life-cycle view of careers was not actually tested.

Problems of rigorously testing the demand for the schooling side of human capital theory in European countries have similarly been large, although more general explanations of the behaviour of demand for higher education along these lines have been plausible. For instance, the impressive rise in the age participation rates for higher education in the United Kingdom in the 1960s and their stability (and even fall) since the early 1970s have been plotted against changes in the availability of student grants, the fall in their value relative to the earnings of employed youth, and the fall in the ratio of graduates' starting salaries to the average wage. These types of explanations, however, remain at a rather general level. Turning to demand for specific subject areas, the rationing of higher education in Europe makes it almost impossible to test the extent to which subject choice is influenced by earnings. The major attempt to do this for the United Kingdom was unsuccessful (Klinov-Malul 1971).

While numerous surveys in both developed and less developed countries have concluded that the economic aspects of schooling are strongly considered by potential students and their families, the human capital hypothesis that it is possible to predict the strength of demand

for schooling from variations in the ratio of private costs and expected returns has not been substantiated.

4. School-leaver Unemployment

Unemployment is one of the issues which has been given much attention since the early 1970s in the literature covering the less developed countries. Surveys of open unemployment (as opposed to underemployment) in these countries have generally shown that it is greater in urban than rural areas and that within urban areas it is more serious for females than males, for the 15-to-24 years age group than other age groups, and for the more educated, at least up to postsecondary education. In the early 1980s the world recession has also resulted in levels of unemployment in the developed countries higher than at any time since the peaks of the 1930s. Once again rates of unemployment are higher for females and for the 14-to-24 years age group. As overall unemployment has increased, its concentration among the young has intensified relative to other age groups. The relationship between unemployment and education in these countries, however, appears to be a straight-forward negative one.

As an example of the nature of youth unemployment in the developed countries, Casson's (1979) study based on a labour force sample survey undertaken in European Economic Community (EEC) countries in 1973 and 1975 will be briefly described. Among the results of the survey were the following:

- (a) Duration of search—while levels of unemployment are higher among the young, their duration of search is significantly shorter than for other age groups.
- (b) First job seekers—the proportion of first job seekers among the unemployed is highest among young people and declines steadily with age: these proportions, however, vary considerably between countries, with around 40 percent of the unemployed under 18 years looking for their first job in the United Kingdom while in Italy the corresponding figure was 95 percent.
- (c) Methods of job search—in those countries where public employment agencies are the major form of job search, young workers make below average use of them and rely more on direct enquiry; where employment agencies are less generally important there is little difference in frequency of use between the younger and older unemployed.

Turning to theories of youth unemployment, Casson argues that the statistical evidence supports the job search and school-leaver hypotheses. The job search hypothesis predicts that young people change jobs frequently, resign more commonly, and use informal procedures of job search. The school-leaver hypothesis is concerned mainly with unemployment during a recession. The predictions are that unemployment among school leavers will change in the same direction,

but by a much greater amount than among the working population as a whole and that first job seekers constitute a high proportion of the young unemployed. The explanation behind these predictions is that other potential labour force entrants are much more flexible and find it easier to postpone entry to the labour market than do school leavers. As a recession deepens they withdraw whereas school leavers do not. Casson argues that the evidence does not support this explanation. On the one hand, the participation rate of adult women has continually increased, and on the other, the option of staying on at school has in general been taken. The results of a survey of employer attitudes towards younger and older recruits in the United Kingdom may be significant here. In all major respects apart from physical fitness, employers rated older recruits higher.

Turning to youth and school-leaver unemployment in the less developed countries, two features of labour supply dominate: the historically high growth of numbers and the increasing level of educational qualifications acquired by potential entrants. The annual average growth of the population between 1950 and 1970 in the less developed countries was 2.4 percent, three times that of today's developed countries in the nineteenth century. One result is that around 40 percent of the population is below the age of 15 years. The new labour force entrants are increasingly better educated as a result of rapid expansions in both primary and secondary enrolments since the 1960s. Not only, then, are new entrants more numerous than those retiring, they are better educated. Looked at in terms of jobs, while the required number of new jobs is increasing due to population growth, the quality of those jobs is also expected to increase. These combined pressures have been putting great stress on the labour markets, particularly in urban areas.

The most conspicuous feature of urban unemployment in less developed countries is that it is concentrated on the young with the ratio for the 15–24 years age group often being over two and three times that for the total labour force. Given the age profile of unemployment and the recent expansion of education, it is not surprising that the unemployed tend to be relatively well-educated. While there are countries which do not fit the overall pattern, the available evidence appears to show a positive relation between levels of urban open unemployment and education up to the end of secondary school followed by a reduced level of unemployment among tertiary-level leavers (Squire 1981). This pattern also appears to correspond with variations in the duration of job search, a measure which is arguably more useful for identifying employment "problems" than unemployment rates.

Disagreements over the appropriate analytical treatment of school-leaver unemployment have tended to be sharp. Recently there has been a shift away from those who lay the blame on the schools themselves and on the antimanual work aspirations which they are said to produce through inappropriate curricula and teaching

methods, towards a greater emphasis on the effect of wage differentials. Wide differentials are said to provide a rationale for extensive periods of job search particularly in countries where labour market information is poor. In this interpretation of school-leaver unemployment, alterations in school practices may be desirable but cannot in themselves result in altering school-leaver aspirations and eliminating unemployment. Unemployment is, then, regarded as a period of job search with its duration depending on the relative strength of three factors: (a) the higher the level of education an individual receives, the wider the variance of possible wage offers and therefore the longer the likely period of job search; (b) the higher the level of education an individual receives, the higher the opportunity cost through earnings forgone while unemployed and therefore the shorter the likely period of job search; (c) the greater the amount of financial support from the individual's family, the longer the period of job search.

The period of job search is seen as resulting in greater labour market information and a reduction in aspirations to a more "realistic" level.

Bibliography

- Blaug M 1973 *Education and the Employment Problem in Developing Countries*. International Labour Organization, Geneva
- Blaug M 1976 The empirical status of human capital theory: A slightly jaundiced survey. *J. Econ. Lit.* 14: 827-55
- Cain G G 1976 The challenge of segmented labor market theories to orthodox theory: A survey. *J. Econ. Lit.* 14: 1215-57
- Casson M 1979 *Youth Unemployment*. Macmillan, London
- Colclough C 1982 The impact of primary schooling on economic development: A review of the evidence. *World Dev.* 10: 167-85
- Freeman R B 1971 *The Market for College-trained Manpower: A Study in the Economics of Career Choice*. Harvard University Press, Cambridge, Massachusetts
- Hinchliffe K 1975 Education, individual earnings and earnings distribution. *J. Dev. Stud.* 11: 149-61
- Jencks C, Bartlett S et al. 1979 *Who Gets Ahead? The Determinants of Economic Success in America*. Basic Books, New York
- Klinov-Malul R 1971 Enrolments in higher education as related to earnings. *Br. J. Ind. Relat.* 9: 82-91
- Lockheed M E, Jamison D T, Lau L J 1980 Farmer education and farm efficiency: A survey. *Econ. Dev. Cultural Change* 29: 37-76
- Psacharopoulos G 1975 *Earnings and Education in OECD Countries*. Organisation for Economic Co-operation and Development, Paris
- Squire L 1981 *Employment Policy in Developing Countries: A Survey of Issues and Evidence*. Oxford University Press, New York
- Thurow L C, Lucas R E B 1972 *The American Distribution of Income: A Structural Problem*. Joint Economic Committee of the United States Congress, Washington, DC
- Turnham D, Jaegar I 1970 *The Employment Problem in Less Developed Countries: A Review of Evidence*. Organisation for Economic Co-operation and Development, Paris

Work and Education

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In most societies, education and work are intimately connected. Schooling is the main institutional experience shared by the young, while work is the principal institutional experience of adults. Most jobs and occupations have educational requirements for entry and advancement, and the organizational forms of schooling correspond closely with the organizational forms of work. Further, schooling attainments represent an important mechanism for determining social and occupational mobility from generation to generation. In many nations, schooling is even planned and assessed according to its contribution to meeting manpower needs and creating a productive labor force.

Although the term education is sometimes used interchangeably with schooling, it is important to note that schooling is not the only form of education. However, schooling represents such a dominant aspect of education in modern societies that the convention of equating education and schooling in the advanced industrialized societies will also be adopted here.

1. Correspondence Between Education and Work

Every society has specific forms of work which derive

from the particular ways in which the society is organized. In traditional societies, adults must be able to produce directly the food, clothing, and shelter which they require for subsistence. In advanced industrial societies, adults must be able to function as workers in large and bureaucratic enterprises in which most jobs are unconnected with the production of daily needs and where work is broken down into highly routinized and repetitive tasks under a vast division of labor. The wages received for performing these tasks can then be used to acquire the necessities of life and any luxuries that can be afforded. In each situation, the societies can only reproduce their forms of work from generation to generation if the young are educated to perform in appropriate work roles by the time that they attain adult status.

Exposure to work tasks from an early age and placement in local work apprenticeships have been the dominant forms of preparation for work under preindustrial circumstances. Although schools existed prior to the Industrial Revolution, few children attended them and they were not crucial experiences for the world of work except for those who would enter the so-called learned professions of law, medicine, teaching, and the ministry.