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Author(s): George Psacharopoulos

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## **Links between Education and the Labour Market: a broader perspective\***

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GEORGE PSACHAROPOULOS

Linking school to the labour market has been a perennial topic in the literature of the economics of education. The fact that such a link, however defined, has never been achieved in any type of country, testifies to the complexity of the task, if not to the impossibility of ever achieving it.

In this paper I provide an analytical framework for understanding what such a "link" means, and why so many attempts to achieve it have failed. It is argued that although economic dynamics is the predominant force shaping the long term macro-structure of post-secondary education and training, such changes cannot be easily predicted and translated into micro-day-to-day school policies. In fact, reliance on the invisible hand of individual student and family decisions on the level and type of education to acquire may lead nearer to a social optimum than central governmental decisions based on complex models of educational planning and detailed legislation. A prerequisite for such achievement, however, is to bring closer the private and the social cost of education. The political difficulty of implementing such unpopular policy is the key to understanding the dismal performance of past attempts to bring the school system more in tune with the world of work.

### **What Does the Link Mean?**

There are two issues here, one of definition and another of degree. Although the central rationale is always the same, the vocabulary used in the literature is extremely rich. The wording has also been changing over time, and differs according to the level of schooling it refers to. Three streams of thought and associated labelling can be distinguished in this respect:

(a) those referring mainly to the pre-tertiary level, under "relevance", "combining education with production", "curriculum diversification" and the "transition from school to work";

(b) those referring mainly to the secondary and tertiary education levels, as well as to vocational education, under "manpower forecasting" or "assessing labour market needs"; and

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(c) those mainly referring to the tertiary level, under the label of “improving the relationship between industry and the university”.

Whatever the label used, the underlying rationale is that, beyond its cultural, pedagogical, nation-building and other objectives, education serves an economic function in society. Providing the kind of education needed by the economy, or attuning it to a changing labour market, would avoid inefficiency in the use of social resources (like excessive incidence or length of unemployment among graduates of the school system) and would eventually lead to a higher rate of economic growth and social well-being.

Once one of such links has been identified, a significant issue is the extent to which the link is “close”. For example, would an unemployment rate of 10 per cent of recent school graduates be a good or bad link between education and work? Although there is no scientific answer to this question, reference to recent youth unemployment statistics in the countries of the European Economic Community, which are of the order of 20 per cent, or to the fact that one out of five agricultural secondary school graduates in developing countries actually works in agriculture (Velez and Psacharopoulos, 1986) would be sufficient to illustrate that there is something amiss regarding the link between education and the labour market.

Although such a functional/utilitarian perspective has dominated the thinking of development planning in the last half century, for some reason attempts to achieve congruence between education and the labour market have been disappointing, if not absolute failures. In what follows, I briefly review what such failures may have been, provide an analytical framework for understanding the education/labour market nexus, and put forward some thoughts on how the situation might be improved in the future.

### **Failure to Achieve the Elusive Link**

The literature on attempts to improve the link between education and the labour market in countries across the development spectrum is rich, with Blaug (1973) a noteworthy example. In advanced industrial societies, the attempt has mainly taken the form of vocationalising the secondary level of education (Weisberg, 1983; Grubb, 1985). Although logical, such a policy has not improved the transition of youth from school to the world of work. At higher education level, the emphasis has been on legislation by means of ‘guideline’ or ‘framework’ laws that supposedly would improve the quality of education and research, ensure the employability of graduates, and improve the link between institutions of higher education and industry (Neave, 1985). Apart from the fact that all such schemes have been heavily resisted by students and their families, there are no success stories to report.

In developing countries, the gamut of policies to achieve the elusive link have been even richer. At the primary level, attempts have been made to introduce manual labour to schools, on the romantic assumption that children will learn to love manual work and thus remain on the farm after graduation. Such policy has failed in a variety of countries ranging from India to China (Zachariah and Hoffman, 1985). At the secondary level, the rationale has been similarly well-intentioned but naïve. If pre-vocational subjects are integrated into an otherwise academic curriculum, student attitudes toward manual labour will change, and graduates will fill the ranks of middle-level technicians needed by the labour market. Of course, this has happened nowhere (Psacharopoulos and Loxley, 1985). Lastly, at the level of tertiary education, formal

attempts have been made since the Second World War to predict the number of vacancies in high-level manpower for the faculty mix of the university to be determined. Beyond the fact that the forecasting errors of such exercises have been of the order of thousands per cent (Ahamad and Blaug, 1973), several poor countries, especially in Africa, have linked their university systems to such forecasts. The result has been an imbalance in the development of the school system, in the sense of putting the cart before the horse. Development planners seem to have forgotten that countries like South Korea and Japan have first developed a solid base of primary education and then built post-compulsory and technical/vocational education on to it a much easier task than the top-bottom approach still attempted in some developing countries.

However, perhaps the ultimate example of an attempt to link education to the labour market is that of the state offering guaranteed employment to all university graduates. Several countries that have tried this approach, like Egypt, Sudan, Somalia and Tanzania, have abandoned it in the process (Chapman and Windham, 1985).

### **Secular Economic Dynamics versus Shorter Range Planning Attempts**

What are the reasons behind so many failures to achieve the link between education and the labour market? Let us refer to an impressionistic, although broadly accurate graph. Figure 1 illustrates four fundamental long-term trends that have been widely and undisputedly documented in the literature. First, the production (GNP) mix is moving away from agriculture and towards services and manufacturing (Panel A). Second, the ratio of persons with more education ( $L_e$ ) to those with less ( $L_o$ ) has increased steadily, and accelerated since the 1960s (Panel B). Third, the ratio of economic rewards ( $W$ ) for those with more education relative to those with less has been steadily declining since such data have been available (Panel C). And the private cost of attending schooling ( $C$ ), especially higher education, has been dropping (Panel D).

Although the graphs are drawn illustratively without any specific reference to time and scale, it should be noted that the rates of change (slopes) in panels A and B are much faster than the rate of decline shown in Panel C. The reason is that the increased supply of educated labour has been counterbalanced by an increased demand for the services of such labour stemming from the relative rise in the mix of manufacturing and services which are more skill-intensive relative to the declining agriculture. As a result, the reward gap between the more and less educated has only slightly been reduced over time. This is a phenomenon that Nobel Prize winner Jan Tinbergen (1980) has lucidly described as the race between education (supply) and technology (demand).

Internalising such fundamental secular trends is very important for the understanding of past failures to achieve a match between education and the labour market. The first trend is unavoidable and should be considered as a datum, at least in that aggregate form. Whether a central planner likes it or not, any type of economy will move in the future towards a greater share of manufacturing, and especially services, in the composition of the final basket of products. However, the finer composition of the product mix within the broad sector of, say, manufacturing-services, is impossible to predict even in the medium term. One example will suffice: the unprecedented growth of computing services and their manpower implications in the last decade. Technology in the future may move at an even more accelerated pace, ridiculing any attempts to predict it, let alone any attempts to fit the school system to it.

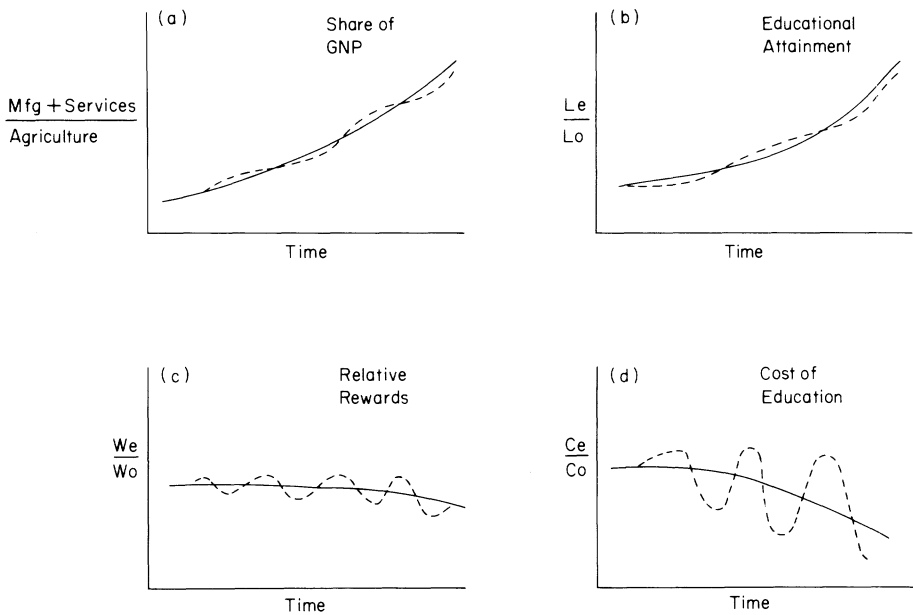


FIG. 1. Long-term trends relevant to education and labour market links.

The second trend of steadily rising educational attainment in the labour force and population in general may be casually interpreted as a waste, in the sense that typists may not need a college degree, if in the past they have performed their duties with a secondary school certificate (Dore, 1976). This abstracts from the fact that a more educated typist may perform her duties more efficiently if she has had more education, and also that she may contribute in other ways to the productivity of the office environment (e.g. by editing).

The growth of the ratio of the educated versus the less educated has been fed by two independent forces: first, the increased sophistication of the product mix under the first trend discussed above; and, secondly, by the existing relative reward structure (Panel C in Fig. 1). Any attempt by a planner to contain the relative growth of education will, one way or another, fail because it goes against the grain of the long-term dynamics of supply and demand. To put it simply, one cannot artificially restrict entry to universities, or to the faculty of social sciences, on the grounds that "there are too many social science graduates relative to the agronomists that the country needs", if the relative rewards in society are in the ratio of two-to-one in favour of social science graduates. Under such circumstances, any attempt to increase the supply of agronomists will fail (Psacharopoulos, 1980). It is this relative reward structure that feeds the supply of educated persons, sometimes mislabelled "social demand" for education. As long as the relative rewards remain at the ratio they have been in the last two or three decades, there will always be a supply of applicants willing to enter the higher levels of education.

Another key element that should be considered in this discussion is the private cost

of attending schooling. As a rule, state intervention in education—in the name of educational planning for increased efficiency or equity—lowers the price of education to the individual with respect to what it really costs to society to provide such education (Panel D). Of course, the lower the cost of education, the higher the demand for it. But although such policy may be welcome on both efficiency and equity grounds for the lower levels of education, it may in fact be damaging to both objectives when applied, as is the case, to the higher levels (World Bank, 1986). The reason is, first, that evidence from a large number of countries, especially at the low end of the development spectrum, indicates that it is primary education that should receive priority—the artificially low price of higher education results in investment taking place at the wrong end of the scale (Psacharopoulos, 1985). Secondly, universities in all types of countries are attended in greater proportions by the children of the relatively well-to-do. Direct and indirect student subsidies reinforce social inequalities. To put it differently, state intervention in education may in fact do a disservice to achieving a better link between education and the labour market (Psacharopoulos, 1986).

Within the secular trends depicted in Fig. 1 there are shorter term fluctuations which are asymmetric regarding their time incidence and length. (Such short-term fluctuations are depicted in the figure as dotted lines along the main trends.) Thus, at the level of aggregation adopted here, the overall trend in panel A is perhaps the least prone to such fluctuations. The same applies to panel B because of the long gestation period of educational investment. Panel C is more volatile and there is a large literature on the movement of relative salaries by field of higher education (Freeman, 1971). And Panel D, of course, depends upon the particular government policy.

The dotted line ripples along the main trends depicted in the figure are very important—perhaps the key—to understanding the impossibility of achieving a close link between education and the labour market. The reason is that individuals (in making their decision to follow a given level of education) and the state (in designing the future supply of education) respond to the short-term signals which may be at odds with the fundamental and unpredictable long-term structural transformations of the economy and the labour market. In fact, by lowering the price of education at a given point in time, the state (for whatever reason) may reinforce the ‘unlinking’ between education and the labour market in the sense of increasing the incidence of unemployment among graduates four years into the future. Of course, the same could happen if individuals responded to a present rise in the salaries of graduates in faculty X, which might not occur when an increased cohort of graduates entered the labour market four years later.

However, there is a difference between the action of the state and the individual in this respect. If education were not subsidised to the extent it is, individuals would be more prudent in their choice of ‘educational career’, in the sense that they themselves would have to bear the consequences of a wrong decision regarding the level and type of education acquired. To put it differently, the burden of a wrong decision regarding education would fall back on the individual undertaking such a decision rather than on the general taxpayer.

### **What are the Alternatives?**

The dismal account of failed policies may give the impression that achieving a close link between education and the labour market is like searching for the Holy Grail.

Therefore, a radical alternative would be *not* to attempt artificial or centrally imposed link between education and the labour market, and to let educational development proceed for the sake of education, a policy which might or might not be in tune with economic considerations. Yet such a radical alternative is unlikely to be accepted by keen central planners or social engineers.

In addition to the reasons given above, the following have also contributed to the past failure to achieve a desirable link. First, the lack of empirical evidence on key factors governing the link between education and the labour market; secondly, the heavy governmental involvement in the provision, financing, and regulation of education; and thirdly, the political cost of adopting a policy conducive to long-term social welfare, even if unpopular with the present-day electorate.

On the first issue, significant progress has been made during the last decade in documenting the links between education and the labour market. Some of the evidence has been stunning, in the sense that long-term beliefs have been challenged by new hypotheses—for example, the idea that primary education may be one of the most vocational types of education it is possible to provide in developing countries (Jamison and Lau, 1982). While such documentation is mounting in the work of organisations like the World Bank (1985), there remains the problem of dissemination of the results to educational decision-makers, planners and the public at large.

In my opinion, it is within the second cluster of reasons that the key to improving the link between education and the labour market is to be found. Here are some possible recommendations that, if followed, may lead to more congruence on the issue at stake:

(i) abandon attempts to predict the future structure of the product mix or the new technologies in order to adapt the school system to them. Any such attempt is only likely to make things worse (Psacharopoulos, 1984);

(ii) enhance the quality of primary and secondary general education, including mathematics and science, so that more efficient specialisation (especially on the job) can take place later on (Jimenez, Kugler and Horn, 1986);

(iii) bring the private cost of education in line with the social cost especially at higher level, while providing student loans for everyone, and selective scholarships for the needy (World Bank, 1986);

(iv) promote closer links between education and industry, not by new or revised framework laws—a favourite European expedient—but by offering higher education incentives to experiment with new programmes passing the market test (e.g. as evidenced by the willingness of individuals to pay in order to enroll for courses, or by industry's willingness to pay for the enrolment of its employees in such courses).

Of course, adopting policies of this kind is not politically easy. This is the reason why the issue of the link between education and the labour market is liable to be a permanently controversial one.

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