Policy Issues and Policy Lessons from the International Literature on Skills Training

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Skills training remains one of the most emphasised policy issues in the current South African economy. The purpose of this Policy Brief is to raise questions about our national skills development strategy in the light of the international literature on the subject. In the process certain new research questions arise for the attention of government, institutions like Setas, and private researchers in universities, institutes and independent consultancies.

1. Introduction

Our official skills strategy does not possess an adequate research base; that is, reasonably well established results concerning strategic issues that are called upon to back decisions. Certain general comments support this conclusion:

- First, the conceptualisation of the problems is partial. Education and skills training are not two conceptually separate spheres, but they are treated separately in policy formation because of their separate institutional histories. This makes no sense in resource allocation terms when looked at in a national perspective. They are competing resource uses for increasing productive competencies that we call human capital. So for the economic analysis of work competencies it is distorting to impose a hard and fast line between education and training.

- Second, too much policy discussion and action is conducted at an aggregated level. For example, training is measured and monitored by sector, by employee group, by broad occupation or accredited skill category, by size of employing organisation like a firm, and so on.

- Third, there is a proliferation of skills shortage estimates by employers, Setas and various government departments which have flimsy credentials for accuracy. Employers when asked about their unsatisfied demand for skilled employees are not told the ruling price for the remuneration package they will have to pay. In addition, shortage estimates at one point in time are seldom if ever tested later as new information about skilled worker demand and supply becomes available. Also there is international evidence that factors like the identity of informants within a firm or other employing organisation influence the estimates of unsatisfied demand.

- Fourth, we cannot simply presume that training institutions and policy instruments are exportable between countries. National circumstances on both sides – like systems of education, employer and trade union organisations, accreditation procedures, and so on – mostly differ, and the consequences for policy borrowing are largely unknown without thorough investigation.

2. Forecasting Demand for Skilled Workers

The design of the National Skills Development Strategy (NSDS) makes provision for the forecasting of skills needs at three levels: the workplace, sector and national or economy-wide. To anyone with knowledge of the relevant literature this is surprising. Manpower planning, as the policy was known in the 1970s, went out of fashion because of its singular lack of success. A few reasons why are the following.

First, in practice a large number of variables have to remain static over meaningful forecast periods. These are required for the numerical estimates of skills needed – skills specified by accredited achievement, by occupation, and by sector – to be within an acceptable range of accuracy. In the literature this was judged not to be the case during subsequent decades. *Technology* evolved rapidly; shifts in patterns of international *trade* altered the mix of skills desired by domestic producers; and the changing *tastes* of consumers for new products kept pace with both these other two altering variables.

Since the 1970s the freeing up of international trade and capital flows between the majority of countries in the world is what is termed popularly as 'globalization'. There is a strong argument to be mounted that these multiple processes have made skills forecasting ever more subject to error. So it remains a mystery why skills forecasting was a feature adopted in the late nineties during the new design of South Africa's skills training strategy.

Second, there is no firm evidence on whether firms do make use of sector-wide skills plans put together by Setas when making decisions to invest in skills training for their workforces. This may be the case but the question remains unresearched.

Third, constructing a sector skills plan (SSP) requires considerable effort and resource input by Setas. Based on the workplace skills plans of its members (firms, state departments, non-profit employers and so on) these SSPs aggregate the workplace skills plans supplied to them, but in practice many use specialised consultants for the job.

Fourth, a number of international studies have pointed out the distorting tendency to use figures of the most strongly growing kinds of jobs as indicative of job growth in national economies as a whole. This both exaggerates the changes in training requirements and tends to neglect replacement demand which is often considerably larger in absolute numbers than the filling of new kinds of skilled jobs.

3. Theoretical Issues in the Economics of Skills Training

Any national system of labour-force training must confront and solve a range of problems. Who is to pay for the training; how is training to be organised and delivered; how is the content of training to be established; how is the skill level of a trained worker to be assessed and certified in a way acceptable to all the contracting parties; and how is success in skill acquisition best measured?

Mainstream economics postulates a competitive model of the market for skills as a *baseline* for analysing these questions. Given fulfillment of the conditions necessary for equilibrium – in which all parties like employers, skilled and unskilled workers satisfy their objectives – market processes will solve these problems. Broadly two types of skills are distinguished (originally by Becker in 1964). These are *general or portable* skills with multiple uses in different producing organisations engaged in the labour market, and *employer-specific* skills which have a use and value in one organisation or line of work only.

By definition the latter skills have much more limited portability and therefore subject to weak if any demand competition. Employers pay the costs of specific skills training because they reap the benefits in production, being higher worker productivity and higher profits. In contrast, competitive demand exist for general skills which move freely between employers, in particular between firms who train and firms who acquire skilled workers by offering higher wage premiums in the market. Given such portability, it does not pay any employer to invest in such general skills, and instead the self-selected employees – workers with skill ambitions – have to pay for their own training.

This account of a competitive market plays a conceptual role in the understanding of human capital investment motives and actions. It functions as a discussion baseline in that it draws attention to the range of determinants likely in practice to influence the volume of investment in human capital. It would hold under a set of hypothetical conditions and is not a description of what happens in practice. In contrast, there is general acceptance of market failure in the production of skills.

4. Market Failures in Skills Training

The competitive market model falls down as a literal guide to the process of skills training because of its presumptions about information and incentives. Deficiencies in these dimensions, as well as other recognised imperfections in every labour market, are accepted generally as the basis for intervention by the state or by trade unions or by employer organisations. These vary between national systems of training. Failure examples are the following:

- First, an *appropriabilty problem* can face training firms that have to recoup their investment outlay over the duration of the average worker's period of employment. That is, such firms have to maintain a definite relationship between increased productivity and increased wage payments in order to stay solvent. They may not foresee this as possible.

- Second, there is a link between incentives to train and restrictions on employment termination. Employers have to *devise ways of retaining* newly skilled workers for the period necessary to make the investment profitable. For instance, Japan has the institution of life-time employment, and Germany has powerful employer associations as well as "social plan" agreements with workers' representatives and trade unions on quitting and severance procedures. These are seriously enforced.

- Third, a *pervasive imperfection in capital markets* due to information asymmetries can inhibit the self-financing of skills investment by individual workers. Banks will not lend to unskilled workers who lack re-payment guarantees or security (collateral in American terminology). In South Africa an interesting contrast is provided by the relative success of our national student loan fund to finance higher education. As yet there are no serious suggestions to provide the same source of funding for workers aspiring to obtain intermediate skills.

- Fourth, *information is inadequate* (i) for employers in choosing the most promising trainees; (ii) for workers concerning training opportunities; (iii) in selecting training programmes which are prone to distortion by outside providers; (iv) as required by independent third parties charged with the evaluation and accreditation of acquired skills; (v) where on-the-job

training is superior to off-site institutional supply the monitoring task of public agencies outside the production and training arenas is particularly difficult; and (vi) because training firms know more about the post-training productivity and personal characteristics of the skilled worker than do non-training firms they have a motive either to delay completion of training or accreditation or both in order to retain the worker.

5. The Public Good Dimension of Training

Where a commodity has certain characteristics which inhibit or obstruct its free exchange in a market, then it is deemed either a public good or a mixed good with public and private dimensions. The defining features of such goods are that they are *non-rival*, meaning that more for one consumer does not mean less for another. They are also *non-exclusive* in that no-one wanting to consume can be stopped from doing so if they do not pay or fail to meet other criteria in rationing access. Where and wherever these characteristics apply there is the potential for free-riding. Purchasers – consumers or producers if the commodity in demand is an input like skilled labour – are under no compulsion to pay the full resource cost for acquiring it. In consequence market allocation then fails.

Insofar as training involves the transmission of conceptual skills, meaning abstract, problem-solving abilities, there is a case for treating it as at least partially public good in nature. Recouping the costs of producing such skills – an absolute requirement for all private goods – is notoriously difficult for public goods.

The poaching of skilled workers by non-training firms, and therefore the inhibition or undersupply of that skill in the economy, *lowers* social welfare because it leads to suboptimal levels of investment in their acquisition. Overcoming this public good dimension of training by encouraging or regulating co-ordination between the contracting parties, is the challenge to all institutional innovations in occupational labour markets. Aiming to obtain a “high-skill” rather than “low-skill” equilibrium along German or Japanese lines, or indeed to copy other national success stories that use training collectives by design like France and Australia, is what system reform efforts usually attempt to achieve.

6. Potential Problems in a South African Application

One impetus for the paper, on which this policy brief is based, is to concentrate policy attention on one of two major labour problems in our economy, a deficiency in basic skills, the other problem being the high level and persistence of unemployment. The origins of this deficiency lie both in our particular economic history and in recent developments in the wider international environment. On this view, the determinants of this lack of skills include our schooling system, the peculiar occupational market institutions of our apartheid past which divided the work force in ways antithetical to skill acquisition, and the economy's structural evolution towards, first, the greater weight of manufacturing and then, second, towards the contribution of services in the make-up of GDP. Most recently, trade liberalisation, ignoring its other consequences, has raised the pace of technical changes imported from abroad, a process that at the same time raises demand pressure for intermediate as well as higher-level skills.

All countries contain mixtures of market and state financing and of organisational responsibility along a wide spectrum of possibilities. A variety of classificatory schemes is suggested in the literature, but the important dimensions can be reduced to the following two:

- The *signalling* function essential in training is either performed predominantly by market processes, or it is supplemented by an information system aimed at matching resources to skill needs through sectoral or state agencies using planning projections of one or other kind. But an earlier section of this discussion brief argued for scepticism about the operational use of sectoral as well as national skills plans.

- The *financing* mode is most often direct spending from the revenue flows of enterprises, government as employer, trainees and other private sector sponsors. Such investment actions are then constrained by horizontal market relationships subject to some degree of competition that varies. Or payment can be drawn from tax revenues or facilitated by public borrowing guarantees, and be subject to top-down interventions by one or more layers of governmental authority.

But no single model from elsewhere is likely to suit South African conditions. Institutions can seldom be transferred on a one-to-one basis between countries. This is because they require complementary supports that also differ. To illustrate, employer organisations in the shape of strong formal and informal ties between firms at the industry level are a necessary condition for co-operative training. But they are by no means a sufficient condition. In the prominent German case, co-operative industrial relations and a financial system that fosters long-term company decision-making about human resource investment have proved to be integral elements in the success of the system.

For years to come the overwhelming majority of our trainees acquiring market-ready competencies will lack basic skills. This is because of deficiencies in their compulsory and further education, principally in mathematics, science and communication abilities. These foreclose many opportunities for employment.

In the international literature the applicable terminology concerns *basic skills* – by convention reading, writing and numeracy – that are lacking in labour force entrants who did not complete secondary education, or in high school graduates not qualified adequately to move on to vocational or tertiary education.

Concern about basic skills deficiencies applies also to a proportion of mature workers in a range of countries with often even lower levels of formal education, some in wage employment, some self-employed and some unemployed. However, the rates-of-return to training investment in older workers in industrial countries when calculated tend to be minimal or negative. This shows up in a stark conflict between efficiency and equity goals in national resource allocation to skills training, because investing in skills acquisition by older workers may simply not pay. But for us in South Africa, although probably true here too, the main lesson on a wider canvas is that it highlights the complexity of devising a system that has to serve our multiple constituencies *both* efficiently and equitably.

Two related observations need consideration. First, as already mentioned, at the economy-wide level of allocation decisions on human capital, the spending on basic skills training, spending to raise quality in formal education at every level, and spending to provide second chance or remedial programmes in

schools are all *substitutes*. Every such expenditure aims to achieve a similar end, to raise the work readiness, productivity and earning capacity of labour market entrants. Secondly, the choice between them must hinge on the relative rates of return in these different avenues of investment, insofar as these are even roughly calculable.

A major deficiency of current skills discussion in South Africa is that these trade-offs tend not to be recognised. In part the problem may be the result of multiple institutions. Responsibilities in education and training are shared between at least three national government departments as well as between numerous agencies set up by government and reporting to one or more of these departments.

What is the most effective *means* of skills delivery? Is it likely to be off-the-job or on-the-job (OJT), in schools, FET institutions or in work-places? Tentative international evidence points to *situated learning* or on-the-job acquisition as best. Trainees tend to be more strongly motivated because retention in a job by the training employer at the higher skilled wage is more likely under OJT than hiring a worker with a skill obtained outside.

Recent research has shown that many students who leave school without basic reading and math skills can acquire these skills if the pedagogical approach combines basic skills training with technical skills training directly related to real jobs. This “situated learning” approach to basic skills instruction is particularly effective because it builds on knowledge that workers already have, and because it helps students to understand why learning the skills is useful to them. (Murnane & Levy 1994)

7. Training as a Necessary but not Sufficient Condition for Job Creation

Although lowered unemployment is the most prominent policy target in the labour field, and potentially an unambiguous benefit of any act of investment, training must be recognised as fulfilling only one of the pre-requisites for job creation. The other requirements for employment creation make up a difficult list. So claims for a significant employment gain from training expenditure on the implicit presumption it is by itself sufficient must be treated with scepticism.

For a new job slot or unit increase in employment, what is required besides in most cases (i) training of some kind, are (ii) paying the costs normally incurred of screening applicants; (iii) a work station made available or created by investment; (iv) financing a period of low productivity during the worker's initiation and integration into the firm or organisation; (v) a commitment to the worker on future employment and income security; (vi) ruling relative prices of inputs and outputs in the given technology at which an extra job created will be profitable; and (vii) an effective demand existing for the higher output from an additional worker.

All these requirements must be satisfied simultaneously for a net job increase. Merely to provide such a list calls into question the too easy expectation that successful training alone will create jobs. This is presumed so irrespective of other conditions to be met or of public sector programmes designed and funded for that purpose.

8. Conclusion

The aim of this policy brief is to place selected issues from the international literature on skills training in a perspective amenable to South African application. To assist policy-makers and researchers, it summarises the ways of thinking adopted by policy-makers when faced with reform in other national educational and training systems. Certain of the key ideas emphasisied are the following:

First, training and education are commodities with characteristics that militate against simple allocation through a market. They are in part *public goods.* This means that, like knowledge, more training or education for one person does not necessarily mean less for another. So people who free ride on such investments, using them for economic purposes but not paying their full costs, cannot be excluded from their benefits. In addition, education and training have spill-over or external effects as well as being constrained by asymmetrical information which inhibits free and mutually beneficial contracting between producers and consumers. Price signals are thus not efficient, and nor is the volume of investment in human capital at a social maximum.

The causes that contribute to these difficulties in market allocation are (i) the low frequency of purchase of skills training; (ii) the high penalties from making a mistaken choice; (iii) the limited ability to judge the quality of outcomes or know the direct links between inputs and outputs in human capital investment; and (iv) the substantial cost in changing the source of supply. For example, enrolment to acquire a skill can be in a training institute, FT college, university or technical university, as well as in on-the-job training in enterprises of diverse kinds. The literature on industrial countries shows the latter route for investing in skills, OJT, as by far the most important.

Second, markets fail and governments fail, so the wisest policy is to identify actions and institutions which minimise the extent of either kind of failure. This is a truism yet nonetheless difficult to achieve. In general, the benefits from correcting a system distortion have always to be weighed against the costs of raising the resources required to do so. Piecemeal adaptation of this kind is

unavoidable. But the challenge is to create conditions for its rational application when investing in human capital.

Third, the case for the right amalgam of government and market in skill formation, or *setting the economic borders of the state* in this activity as it might be termed, has to rest on two pillars. These are an instrumental theory of how the mixed economy works, combining market forces with state intervention, *and* a set of fundamental principles based on value judgements. The first of these components warns that an economy is complex and may react perversely to actions which seem on the face of it to be welfare-increasing and therefore desirable. The second component, the underlying principles, make clear that there are inescapable trade-offs to be made. All good things do not go together, unfortunate as that may be in real world economies, so difficult choices have to be made.

Too many protagonists in policy debates presume that only instrumental considerations need play a role in deciding what policy actions are best to pursue. On the contrary, we are firmly in the business of comparing imperfect institutions and policies, so we cannot avoid sacrificing one goal for another. That means resort to underlying principles that are inherently normative, like efficiency *versus* employment creation.

Passionate advocacy of *either* an omniscient state *or* of private decision-taking via the market mechanism in every sphere of social and economic activity on presumptive grounds is what we do *not* need. Applied to training as well as educational reform, this point has been implicit throughout this discussion of human capital investment.

Finally, the *complexity* of the issues regarding the role of skills training and education in the development process has been stressed throughout this paper. That explains the deliberately qualified tone of much of the discussion in this brief.