

THE VOCATIONAL SCHOOL FALLACY REVISITED: THE EMPLOYMENT EXPERIENCES OF SECONDARY TECHNICAL SCHOOL GRADUATES IN ZIMBABWE.

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Introduction

School-based technical and vocational training remains an attractive although controversial policy option for politicians and policy makers in developing countries. This article presents and discusses the findings of recently completed research that assesses the employment experiences of secondary technical school graduates in Zimbabwe during the 1980s.⁽¹⁾

In 1986, the government of Zimbabwe embarked on a comprehensive strategy to vocationalise the curriculum of the country's 1500 secondary schools. Analysing the employment experiences of the outputs of what until very recently was the only specialised secondary technical school in Zimbabwe should provide therefore important insights into the likely success of the government's current nationwide vocationalisation initiative. These insights are also likely to be of considerable relevance for other developing countries, particularly in Anglophone Africa, which are interested in promoting technical and vocational training (TVT) in schools.

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The Policy Background

Secondary school enrolments in Zimbabwe increased by over tenfold during the 1980s- from 66,215 in 1980 to 695,515 by 1989. While the government and the ruling party, ZANU(PF), are justifiably proud of this achievement, a growing number of senior politicians, policy makers and educationalists have become increasingly concerned about the relevance of educational provision, particularly at the secondary school level.

With upwards of 250,000 school-leavers each year chasing no more than 50-70,000 jobs in the formal sector of the economy, there is a widespread belief that schools are "failing" to equip young people with the technical and other vocational skills that the majority of them need for productive self-employment, especially in the rural areas where over seventy percent of the population continue to live.

Speaking in 1986, the then minister of education stated that "our education has little bearing on the training of the manpower needs of the country (sic)..... We are spending half a billion (Zimbabwe) dollars of scarce resources every year to produce misfits in our society". (Mutambuka, 1986:4) Zimbabwe had inherited a school curriculum that was "basically academic, UK-oriented, and geared to supporting a narrowly based economy dominated and controlled by a colonial settler oligarchy". (ibid, 5)

In response to these concerns, the government has introduced a new educational strategy whose overall objective is to "transform" the secondary school curriculum from its allegedly academic orientation to one that has a more technical and vocational bias. This, it is argued, will enable children to acquire skills that are not only "practical" and encourage self-employment but are also "recognised in the world of work". (Government of Zimbabwe, 1986)

Serious doubts about the wisdom of this vocationalisation initiative have however been expressed by educationalists and other interested parties, most notably education and training specialists from the main bilateral and multilateral aid donors who have declined to support the policy.⁽²⁾ They point to empirical evidence from numerous developing countries which they claim shows unambiguously that school-based vocationalisation policies have repeatedly failed to attain their stated objectives.⁽³⁾

The 'vocational school fallacy' was first propounded by Philip Foster in the mid 1960s. His and other subsequent critiques of the vocationalisation of the school curriculum are based on a number of inter-related arguments. The most important of these is that for vocationalisation to work, the attitudes of children must be changed by providing practical training that is geared to productive self-employment. In practice, however, schools cannot do this because "the vocational aspirations of children and the occupations they enter are almost exclusively determined by factors outside of the school....no amount of formal technical, or agricultural instruction is going to check the movement from the rural areas, reduce the volume of unemployment, or indeed necessarily have any effect on the rate of development". (Foster, 1965:364) As a result, the level of utilisation of formally acquired skills is typically very low because children eventually find jobs (or simply remain unemployed) with skill requirements that are largely unrelated to their school-based training.⁽⁴⁾

Other criticisms of vocationalisation policies focus on the internal inefficiencies of school-based TVT. Four main reasons are frequently advanced for why schools are inappropriate institutions to impart vocational skills. First, a considerable component of TVT has to be done on the job but organising

meaningful industrial (work experience) attachments for trainees who are still at school is usually impracticable.

Secondly, the training is relatively very costly, in particular because it is difficult to exploit training economies of scale when the numbers of trainees doing specific TVT courses are relatively small. Thirdly, given the general unavailability of experienced and qualified instructors, and the requisite buildings, equipment and materials coupled with lack of time during the school week, the quality of training is invariably of an unacceptably low standard with high examination failure rates.

And finally, it is argued that too much TVT at school adversely affects the acquisition of general skills, most notably those that relate to basic language and mathematical competencies. These are the key skills that schools should concentrate their efforts upon since they largely determine the subsequent trainability of a young person once she/he enters productive employment.

While the arguments for and against school-based vocational training in Zimbabwe have been clearly stated in recent years (see, for example, IBRD, 1990 and Chung, 1989), what has been singularly lacking in this policy debate are hard empirical data which could be used to assess the potential effectiveness of this form of training in the country.

Research Objectives And Methodology

The post-training experiences of selected groups of graduates from Zimbabwe's only secondary technical school, St. Peter's Kubatana (SPK) in Harare, have been investigated in order to assess the extent to which the school has provided vocational training that has enabled its students to find productive

employment in technical occupations. In undertaking this research, therefore, the primary objective has been to determine the external efficiency of the school (ie. what has happened to its outputs once they have joined the labour market) rather than its internal efficiency in providing this training.

The research was conducted in two stages. First, the names and last known home and/or work addresses of students who completed the machinshop engineering course (essentially fitting and turning) at the school were obtained for four separate years, 1980, 1982, 1985 and 1988. These SPK graduates were then written to in order to establish their current (early 1990) whereabouts. A list of their fellow students with whom they had studied accompanied this letter, and each respondent was requested to provide any information they had concerning where any of them could be contacted. Instructors at the school were also important key respondents. The number of individuals to be traced was kept deliberately small in order that sufficient time could be devoted to tracing accurately the work and home addresses of each one of them. (2)

Using this simple tracer survey methodology, the whereabouts of 85% of the total four year output of 61 students in machinshop engineering were established with a considerable degree of certainty. As can be seen in Table 1, only the 1985 group of students were difficult to trace.

The second stage of the research involved sending a simple three page questionnaire to each individual who had been traced. Respondents were asked to give details of their socio-economic background, education and training, career history, current job characteristics, income before and after training, and subjective assessments of the relevance of their training and the level of job satisfaction.

Collecting information using postal questionnaires is notoriously difficult. However, nearly two-thirds of the potential respondents satisfactorily completed and returned the questionnaire. (6) Again, the only disappointing response rate was (quite unaccountably) among the 1985 group.

Training Provision.

St. Peter's Kubatana Vocational Training Centre is attached to a well known secondary school of the same name in the Glen Norah 'high density' suburb of the capital, Harare. (7) It was established in 1978 by the Catholic Church as a private training institution providing three year post-secondary artisan training courses in carpentry, building, machineshop engineering, and motor mechanics. At that time, Africans were effectively debarred from the white dominated craft (ie. artisan) apprenticeship training scheme which was based on employer sponsorship and with most training being done on the job. (8) Thus, SPK was originally conceived as an alternative training route for Africans wanting to be artisans.

Political independence in 1980 saw the rapid dismantlement of racially segregated training provision in Zimbabwe. While SPK continued to provide its three year post-secondary training, this was regarded as a preparation for rather than an alternative to craft apprenticeship. (9) But, since most SPK students already had the minimum entry academic qualifications for craft apprenticeship, the training was essentially duplicative and thus unnecessary.

It was decided therefore to change the form of training provision at SPK. Since 1984, students have joined SPK after completing two years of secondary education and during their two remaining years at school they have received a combined academic and vocational training. (10) Thus, in addition to studying for six 'O'levels,

each student spends about one-third of his time being trained in one of the above-mentioned trades. The vocational syllabus followed is that of the Zimbabwe National Craft Certificate (ZNCC) which is the qualification taken by indentured craft apprentices in the first or second year of their training.

The other major change that occurred in 1984 was that the Catholic Church relinquished its control of the school to the state. Close links have, nevertheless, been maintained with the church. In particular, SPK has received considerable financial assistance from church organisations overseas which have provided modern equipment for its workshops.

As a secondary technical school proper, SPK has had to contend with numerous problems and constraints which have seriously impaired its internal efficiency as a training institution. Probably the most serious problem has been that SPK has been unable to attract sufficient numbers of good quality Form Two graduates. Despite a maximum enrolment capacity of around 280, actual enrollments in 1989 were only 181. This is simply because children and their parents correctly perceive that it is academic 'O' levels (with good grades) that are the key entry requirements for increasingly scarce post-secondary training places.

It is this training that mainly determines access to the better paying jobs in the formal sector. Passing 'O' levels well is therefore the sine qua non of secondary school attendance. Parents go to great lengths to ensure that their children (but particularly boys) attend schools that will maximise their chances of acquiring these all important qualifications. It is not surprising, therefore, that SPK with its emphasis on vocational training has been regarded by most parents and children as providing a distinctly inferior academic education and has therefore been shunned by many of them.

Once at SPK, generally below-average students have had to study not only for their 'O' levels but also the vocational ZNCC qualification (which, to reiterate, is primarily intended for full-time craft apprentices who already have at least five 'O' levels). For most SPK students, the demands have been just too great. This is clearly evidenced by their examination results. Since the mid 1980s, fewer than 15% of Form Four students have left SPK with a school certificate (ie. at least five 'O' levels) which increasingly is the minimum education qualification level required for semi-skilled and even unskilled jobs by employers in the Harare area. Worse still, less than 10% have passed the ZNCC.

In common with most other government-run technical and vocational training institutions in Zimbabwe, SPK has been seriously understaffed which has meant that it has not usually been possible to maintain the standards of instruction that are required if students are to cope with the ZNCC syllabus.

Finally, annual training costs per student have been at least fifty percent higher than for students attending conventional academic schools.⁽¹¹⁾ Obviously, higher costs can be justified if the net benefits of the additional vocational training, as proxied by individual incomes once in employment, are sufficiently higher than they would have been in the absence of this training. However, as will be discussed below, this has not been the case for most SPK graduates.

Post-Training Experiences.

Since the post-training experiences of the early and late 1980s SPK graduates have been so markedly different, each of these groups will be examined separately.

The 1980 and 1982 Graduates: The post-training experiences of these first outputs from SPK have been quite positive in that most of them have managed to get "good jobs". However, since their training at SPK was not recognised by the appropriate government bodies, it was of limited value in obtaining the high paying artisan and other skilled jobs in the large company sector. Consequently, most of them had little alternative but to look for further training as craft or technician apprentices. In the event, about half of them succeeded in doing this. Among these individuals, therefore, they ended up spending at least seven years training to be fully qualified machinshop artisans.

For these early graduates, their SPK training was a relatively effective although decidedly expensive way of gaining favourable places in the rapidly growing training queues for craft and technician apprenticeships. But given that most of them already had good enough 'O' levels to go straight from school into apprenticeship training, the overall societal benefits that have accrued from secondary technical school training have probably been negative.

All of the 1980 and 1982 outputs were employed at the time of the survey in early 1990. Some 60% of them worked in the private sector, mainly for relatively large manufacturing companies in the Harare area. (see table 2) None of them had established their own businesses. This is hardly surprising given the relatively high incomes earned by skilled engineering personnel in Zimbabwe throughout the 1980s. (see Bennell, 1990a)

With regard to actual job content, nearly all of these early SPK graduates were doing what they had been trained to do; 50% were artisans (mainly fitters and turners), 40% were in supervisory positions (mainly foreman), and the remainder were technical teachers and instructors. Most questionnaire respondents among this group rated SPK training as being "quite relevant" or "very

relevant". (see table 3) In response to the question, 'To what extent have the job expectations you had when you completed your training been fulfilled?', nearly 90% of them stated that they were at least 'moderately fulfilled'. As can be seen in Table 4, 75% of the 1980 graduates rated themselves as 'well fulfilled' or 'completely fulfilled'.

Table 5 shows however that the 1990 incomes of the 1980 and 1982 SPK graduates were quite widely dispersed. This can be partly explained by the marked private-public sector segmentation of skilled labour markets in Zimbabwe; the average monthly incomes of those SPK graduates working in the private was Z\$1700 but only Z\$1225 in the public sector.

The different training experiences of the 1980 and 1982 groups is also a major factor accounting for the large dispersion of incomes among them. (12) The monthly gross incomes of those who completed craft and technician apprenticeships was Z\$2185 in early 1990 compared with Z\$917 for those who had only trade tests, and only Z\$344 for those who had no recognised vocational training qualification whatsoever. (13) What these incomes data suggest therefore is that it has been the subsequent training received by SPK graduates that has largely determined their present incomes rather than the training at SPK itself. Without further training, it would appear that SPK graduates are earning little more than semi-skilled workers in the large company sector in Harare. (14)

Given the lack of personal incomes data during the late 1970s and early 1980s in Zimbabwe, it is not possible to determine what the net income benefits of an SPK training have been to date for this group of graduates. (15) What is clear however is that the 1990 incomes of those who went on to do apprenticeship training are no higher than the corresponding incomes of other craft apprentices

who completed their training at about the same time in the mid 1980s.

The 1988 Group: With only three questionnaire respondents among the 1985 graduates, it is not possible to draw any meaningful conclusions about this group. Thus, the following discussion will focus on the 1988 group only.

The post-training experiences of the 1988 graduates are in marked contrast to the earlier SPK groups. Most striking perhaps is the fact that only one individual (out of the eighteen traced) has succeeded in obtaining a craft or technician apprenticeship. The reason for this is quite simple; SPK graduates are now having to compete with enormous numbers of well qualified 'O' and, increasingly, 'A' level school-leavers from academic schools for the limited number of apprenticeships available. In 1989 alone, there were over 100,000 applicants for fewer than 1000 apprenticeship places. Unlike the earlier SPK graduates, the experiences of the 1988 group indicate that SPK training no longer places them in relatively advantageous positions in these queues for further training. Faced with this situation, SPK graduates have no option but to join the mass of other secondary school-leavers looking for jobs in the formal sector.

The results of the tracer survey show that over three-quarters of the 1988 group had found some kind of waged employment by early 1990. All but two of these jobs were in the private sector. (see table 2) However, four of them (over 20%) were still unemployed well over a year after leaving SPK.

No tracer surveys have been conducted of (Form Four) secondary school-leavers in Zimbabwe since the early 1980s but probably no more than one-third of these children were managing to find wage employment in the late 1980s. Thus, an SPK training does appear to have improved an individual's place in rapidly lengthening job

queues. But, once again, this is a private rather than a net social benefit of secondary technical school training.

Nearly all of the 1988 SPK outputs were doing semi- and unskilled jobs. The breakdown of job titles was as follows: four machine operators/minders, two unskilled (loader, labourer), and two clerks. Only two were in skilled jobs (fitter and turner and sheet metalworker). The general failure of this group to find jobs that they believe they have been trained to do is reflected in their assessments of the relevance of the SPK training with forty percent of them stating that their training was 'totally irrelevant' or of 'limited relevance'. (see Table 3) More serious still, nearly sixty percent of them stated that, given their initial job expectations, they felt 'completely unfulfilled' in their present job. (see table 4)

As can be observed in Table 5, the average monthly income of the 1988 group was £311 in early 1990. This is very much in line with the wages paid by larger private companies for semi-skilled labour. What is particularly striking is that the average monthly income (again in early 1990) of production engineering artisans who finished their apprenticeships in 1988 was almost exactly five times greater than the 1988 SPK group. And yet, the total training costs of two years of full time attendance at SPK in the late 1980s were only marginally less than the costs of training a craft apprentice over four years.

Using the short-cut method of calculating internal rates of return to training investments, these incomes and cost data yield social internal rates of return of only 10-15% for the 1988 SPK graduates compared with 50-65% for production engineering artisans who finished their apprenticeships in the same year.

(14)

The use of rates of return as the key decision making criterion for education and training investments has been widely criticised, particularly in developing countries where labour market distortions are usually so great that personal incomes do not accurately reflect individual productivities and social opportunity costs. However, the existence of such a large differential in the social internal rates of return between secondary technical school and formal apprenticeship does suggest that the former type of training is relatively much less cost-effective in Zimbabwe.

Conclusion

The SPK tracer and questionnaire surveys show that Zimbabwe's only fully fledged secondary technical school has been neither effective nor efficient in training a core group of artisans during the 1980s. To believe that specialised vocational secondary schools can change the occupational and employment aspirations of children while at the same time provide cost effective training is therefore as much a fallacy in Zimbabwe as it has proved to be elsewhere. While this is not to suggest that no practical, vocational skills training should be offered to secondary school children in Zimbabwe, the vocationalisation of large segments of the curriculum by introducing formal courses such as the ZNCC is likely to be a costly failure.

As part of the new vocational strategy, the same combined academic and vocational curriculum as at SPK has been introduced at twenty-eight selected secondary schools throughout Zimbabwe. From the fragmentary evidence that is available, it seems clear that these schools have faced even greater difficulties in providing good quality vocational training than at SPK. Fitting the ZNCC curriculum into an already crowded timetable, recruiting and retaining qualified instructors, and acquiring the basic equipment and materials have been particularly acute problems. It

is perhaps not surprising therefore among the first group of children from these schools who sat their ZNCC examination in 1987 nearly ninety percent failed. Whether, in the light of these results, the Ministry of Education and Culture will maintain its commitment to the vocationalisation of the secondary school curriculum in Zimbabwe remains to be seen.

Meanwhile, it is ironic that the Ministry of Higher Education, which, since 1988 has been responsible (somewhat anomalously) for SPK, (17) seems to have lost faith in school-based vocational training since it has been decided that SPK should return to being a three year, post-secondary pre-employment training centre. However, given the palpable ineffectiveness of this form of training provision at SPK prior to 1984, this particular policy replay also seems destined to fail.

Table 1: Coverage of SPK tracer and questionnaire surveys

Year finished	Total output	Traced	Questionnaire
1980	17	15 (88.2)	8 (47.0)
1981	12	12 (100.0)	11 (91.7)
1985	13	7 (53.8)	3 (23.1)
1988	21	18 (85.7)	18 (85.7)
Total	61	52 (85.2)	40 (65.6)

Table 2: Early 1990 employment of SPK machinshop engineering outputs, 1980-1988. (percentages)

Year	Public	Private	Unemployed
1980	40.0	60.0	0.0
1982	41.7	58.3	0.0
1985	14.2	85.8	0.0
1988	16.7	61.1	22.2

Table 3: Respondent assessments of the relevance of their SPK training. (percentages)

Year finished	Totally irrelevant	Limited relevance	Of some relevance	Quite relevant	Very relevant
1980	0.0	0.0	0.0	25.0	75.0
1982	0.0	0.0	25.0	41.7	33.3
1984	0.0	0.0	33.3	33.3	33.3
1988	13.3	26.7	13.3	20.0	33.3

Table 4: Respondents' ratings of levels of career fulfillment.

Year	Completely finished unfulfilled	Poorly fulfilled	Moderately fulfilled	Well fulfilled	Completely fulfilled
1980	0.0	12.5	12.5	62.5	12.5
1982	10.0	10.0	50.0	20.0	10.0
1985	0.0	0.0	66.7	0.0	33.3
1988	60.0	0.0	33.3	6.7	0.0

Table 5: Early 1990 gross monthly incomes (Z\$) of SPK and production engineering artisan questionnaire respondents.

Year finished	Lower quartile	Median	Upper quartile	Average	Average private	Average public
SPK graduates						
1980-82	700	1245	2300	1305	1700	1225
1988	231	352	405	311	311	-
Production engineering artisans						
1985 (1)	1845	2180	2500	2176	2327	1617
1988 (1)	1400	1700	2002	1741	1760	1261

Notes: (1) Year in which completed four year apprenticeship. There are a total of 31 and 23 production engineering artisan questionnaire respondents in 1985 and 1988 respectively.

REFERENCES

- Addison, J. and S. Siebert. 1978. *The Market For Labor: An Analytical Treatment*.
- Bennell, P. 1990a. "Alternative Training Modes: Mechanical Engineering Artisans in Zimbabwe". *Comparative Education Review*, forthcoming.
- Bennell, P. 1990b. "Training For Rural Self-Employment?: Youth and Rural Training Centres in Zimbabwe". *Development Policy Review*, forthcoming.
- Bennell, P. 1990c. "Where Are They Now?: The Employment Experiences of Mechanical Engineering Graduates, Technicians and Artisans in Zimbabwe During the 1980s". *Zimbabwe Journal Of Educational Research*, forthcoming.
- Dougherty, C. 1989. *The Cost-Effectiveness of National Training Systems in Developing Countries. Policy, Planning and Research Working Paper No. WPS 171*. Washington, D.C.: World Bank.
- Foster, P.J. 1965. "The Vocational School Fallacy in Development Planning" in C.A. Anderson and M.J. Bowman (eds.), *Education and Economic Development*. Chicago: Aldine Publishing Company.
- Government of Zimbabwe. 1986. *Ministry of Education Conference on the New Structure and Content of Education in Zimbabwe*. Nyanga: 19-21 November, mimeo.
- Mutumbuka, M. 1986. *Reforming The Education System In Zimbabwe*. Speech at Belvedere Teachers' College. Harare: 29 July, mimeo.
- Psacharopoulos, G. 1981. "Returns To Education: An Up-dated International Comparison". *Comparative Education*. 17(3).
- Psacharopoulos, G. 1987. "To Vocationalise Or Not To Vocationalise?: That Is The Curriculum Question". *International Review of Education*. (33).
- World Bank. 1990. *Zimbabwe: A Review of Primary and Secondary Education. From Successful Expansion To Equity of Learning Achievements*. Harare: Population and Human Resources Division, Southern Africa Department.

1. This research on secondary technical school graduates forms part of a wider study of mechanical training at the professional, technician and artisan levels in Zimbabwe. See Bennell 1990a, Bennell 1990b, and 1990c.
2. The World Bank, in particular, has categorically refused to fund school-based TVT in Zimbabwe.
3. For comprehensive reviews of this evidence, see Dougherty, 1989 and Psacharopoulos, 1987.
4. The clear implication is therefore that children are unable to make long-term career choices while they are still at school.
5. Tracer surveys in developing countries are often seriously flawed because large percentages of individuals cannot be traced.
6. Respondents were promised a summary of the findings of the research for their training institution in return for their assistance in completing the questionnaire. This undoubtedly boosted response rates.
7. Prior to Independence in 1980, these suburbs were called 'townships'.
8. This is essentially the traditional apprenticeship scheme which prevailed in the United Kingdom up until the early 1980s. In Zimbabwe, no major changes have been made to this apprenticeship scheme since Independence. See Bennell 1990a
9. In fact, the training the training was explicitly called "pre-apprenticeship".
10. Zimbabwe has a 7-4-2-3 education system. Progression up to Form Four ie. eleven years of education is virtually automatic. Thereafter, however, only about 10% of children are able to continue their education.
11. Total recurrent training costs per student at SPK were Z\$1210 per annum in 1989/90.
12. While two-thirds of the 1980 group ^{went} on to do apprenticeships, less than a third of the 1982 graduates completed apprenticeships. Just why the training experiences of these two groups should have been so different remains unclear. One reason may be that it was considerably easier for Africans to obtain apprenticeships at Independence in 1980 than even a few years later when competition had become more intense.

13. Artisan trade tests were introduced by the government in the early 1980s mainly to provide certification for skilled Africans who had acquired their skills on the job. There are four levels from one the lowest to four the highest.

14. The P-E Consulting Group undertakes a comprehensive annual salary survey of private and parastatal sector jobs in Zimbabwe. See P-E Consulting Group, 1990.

15. Although respondents were asked to state what their incomes were "before training", many of them were not clear whether this referred to SPK, apprenticeship or other training. Given the lack of consistency in responses to this question, these incomes data could not be used.

16. This short-cut method has been frequently used when adequate time series incomes data have not been available so that individual earnings can be discounted over time. It is based on the following equation:

$$IRR = \frac{\text{Immediate post-training income} - \text{pre-training income}}{\text{Total training costs}}$$

This method provides reasonably accurate rates of return estimates when the post-training period is relatively long (at least thirty years) and where the pre- and post-training income differentials remain relatively constant over time. See Addison and Siebert, 1978 and Psacharopoulos, 1981.

17. All education was the responsibility of one ministry up until 1988. Since then, separate ministries have been responsible for primary and secondary and higher education. The newly created Ministry of Higher Education also took over technical and vocational training from the Ministry of Labour, Manpower Planning and Social Welfare in 1988. Consequently, as a vocational training institution (albeit at the secondary school level), SPK was incorporated into this ministry.