General Training, Government Responsibility and The Rural Unemployed

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INTRODUCTION

"The least mobile variable factor of production, labour, is nowadays also the least important. The factors of production which matter are all now highly mobile."

This contentious statement by a well-known journal,[1] highlights one of the problems of an economy which claims labour as its main natural resource. If labour does not matter then prospects for such an economy are bleak, but on the other hand, if the other factors are highly mobile, then emigration need not be the life-blood of such a place. Manpower may well be the least important factor yet if the work-force of an area is of a lower calibre than the average for the country, that area is at a distinct disadvantage if it hopes to attract new industry. This is the problem that must be faced in the rural areas of Northern Ireland. It is a regional problem within a regional problem. As manpower needs in agriculture continue to decrease, more workers turn to industry for employment. This labour supply is not well suited to the needs of industry, and its adjustment to the industrial environment may often be a traumatic and

expensive experience for both workers and management. One solution may be that those rural workers who are the victims of structural change should be given a general industrial training by the Government. This may than make the pool of unemployed an effective magnet to an entrepreneur considering locating in such an area.

This paper will consider two aspects of the question. First, it will look for a theoretical justification for Government intervention in this field. Secondly, it will examine the results of a study of a general training course held at Enniskillen Government Training Centre, to see if such training is both feasible and worthwhile.

I. (A) Becker's approach

It is important, as a preliminary, to distinguish between education and industrial training. This is best seen by utilising Eckaus's[2] terminology of General Educational Development (GED) and Specific Vocational Preparation (SVP). The former includes reasoning, mathematical and language skills, and ability to follow instructions. The latter is that preparation which is necessary to give average performance on the job.[3] Industrial training is usually restricted to the latter area but some workers, particularly those from rural areas, would benefit from utilising further GED.

Becker[4] developed the widely-used terms of general and specific training, from Marshall's[5] original concept. Perfectly general training is that which can increase the marginal product of all firms where it is put to use. Rational firms in perfectly competitive labour markets will therefore provide this training only if they do not bear the cost. If a firm did pay for general training and the worker was attracted away, then another firm would be gaining an external economy at the expense of the original entrepreneur. Completely specific training is that which can have no effect on the marginal product of other firms. Each firm must pay *in toto* for this training, as wages elsewhere would be independent of it, and a redundant worker could make no further use of his unique skills.

Oatey[6] redefines general and specific training in terms of labour mobility, and it is this concept that is most relevant to a rural development area. General skills may be defined as such in terms of the whole economy, but if there is low mobility between firms and industries, and especially geographically, then there is an air of specificity about them. Going one step further, if a rural area has only one industry utilising general skills, then these skills are specific to it. If one accepts the implications of Becker's theory, then this firm, which may be newly located, will have to finance its training, which it would not have had to do elsewhere. To avoid this location penalty, the Government must intervene and provide the necessary training. If the firm is the sole industrial employer then it could be argued that decreased labour turnover will more than offset training costs. There is no evidence that labour turnover is less in rural areas and it could possibly be higher. It would be foolhardy therefore to present this nebulous benefit as something to offset a tangible extra cost.

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The validity of the above reasoning depends on how much one can generalise from Becker's limited parameters. One of his main assumptions is that of a perfect labour market, with free entry and exit, perfect mobility, and absence of Trade Unions or other "disruptive" influences. Eckaus[7] makes the point that for Becker "the ghost of 'economic man' walks again"! It is with this in mind that the regional implications of a dynamic model of the determinants of the training decision, must be examined.

(B) *Pettman's Approach*

Becker's model shows the equilibrium of a firm's training in a competitive market to be:

$$\frac{MP_0 + \sum_{i=t}^{n}(MP_1 - W_1)}{(1+r)^n} = \frac{W_0 + \sum_{i=t}^{n} C_1}{(1+r)^n}$$

Where MP_0 = Marginal Product, before training
W_0 = Wage before training
ΣMP_1 = Marginal Product stream after training
ΣW_1 = Wage Stream after training
ΣC_1 = Time Stream of Opportunity Costs and Outlays on Training
r = discount rate
n = length of time of the labour contract.

$\Sigma(MP_1 - W_1)$, the marginal returns to the firm, will be greater, and training also—the more specific training is, as W_1 will not rise with MP_1.

B. O. Pettman[8] has developed a model of the dynamic imperfect labour market, the aim of which is to show that the firm's training decision relies on consideration of numerous inter-related factors, and not simply on how specific or general the training is.

The model may be expressed as follows:

$$\sum_{i=t}^{n}(MP_1 - W_1) = f(L.G._1\ F_1\ T_1\ O_1\ B_1\ I_1\ LT._1\ E_{k/l_1}\ E_{s1/s2/s3_1}\ U_1\ A_1)$$

Where L.G. = the levy/grant scheme of the relevant I.T.B.
F = firm's size and size distribution in the industry
C = status factors of the occupation
T = amount of training previously undertaken
B = role of union bargaining
I = economic state of the industry and the firm
L.T. = extent of labour turnover and mobility generally
$E_{k/l}$ = elasticity of substitution between capital and labour
$E_{s1/s2/s3}$ = elasticity of substitution between differing skill levels
U = rates of unemployment, past, present and anticipated, locally, regionally and nationally
A = geographical area.

Some of these variables alter significantly in development areas, and it is on these that most emphasis will be placed.

A. It is this variable which brings Government assistance to development areas into the model. In the case of Northern Ireland there is a comprehensive range of courses, grants and advice available on the subject of training. These cover general training as well as specific. This variable is of paramount importance in influencing a firm's training decision, in a development area.

U. If national unemployment rates are high then a firm may feel that it should not have to carry out much training, as suitable workers should be available in the labour market. For Northern Ireland the rural unemployment rates are certainly high, but the skills available will be incompatible with the needs of new industry. Government aid is even more necessary when there are no national labour shortages.

$E_{s1}/_{s2}/_{s3}$. Due to the lack of industrial experience of the unemployed, new firms may wish to keep jobs as unskilled as possible. In certain cases the elasticities of substitution between skill levels will be low, and many workers would need excessive training to reach medium skill levels. If the job is skilled and the process labour intensive, the problem becomes more acute.

LT. The determinants of labour turnover are complex, as are their relationships. In a rural area the incentives to remain in a job are probably higher than elsewhere. Mobility out of such an area is often low, and the likelihood of a temporary quitter returning to his old job after seasonal agricultural work, is also good. The disruptive influence of this attitude to work must be high. A tentative conclusion on labour turnover is that the rural area has probably no advantage over its urban counterpart.

B. It is unlikely that new industries in rural areas would have strong union organisations. It is unlikely also that these new industries would have much fodder for craft unions. The non-craft unions, with interests in fixing labour price rather than supply, will have little interest in the training side. A weak union organisation gives less scope for locally negotiated wage settlements, and less pressure for increases beyond the national level. This may help the firm to reap a larger return on its training investment, than it could do elsewhere.

LG. If the training levy in Northern Ireland were greater than in GB only then would its importance emerge fully. If it is less than the GB equivalent it is a poor location incentive, but if it is greater it may well act as a hindrance. Similarly the grant structure must be at least equivalent.

Every variable in Pettman's equation takes on a different value, when applied to a development area, particularly a rural one. In

general the changed values will reduce the excess of the marginal product stream over the wage stream, after training. Government assistance can ensure that this excess does exist at a level comparable with those found in non-development areas.

(C) Scoville's Approach

The Beckerian approach to training has the inherent weakness of being based on a simple dichotomy between general and specific training. Scoville[9] attempts a synthesis between this theory and that of the neo-classical school[10] which emphasises individual choice among pre-existing occupations. The factors which Scoville introduces are management costs and workers benefits, both of which are relevant to training and to internal and external labour markets.

To understand this approach one must accept the thesis that job design and job content, are flexible elements that the entrepreneur can manipulate to his advantage.[11] Job subdivision and job enlargement both have inherent costs and benefits. A job with a narrow function or breadth will have lower training costs relative to one with "broad" breadth. On the other hand, work quality can be poor, with rejections high, and this in turn may necessitate increased supervision. Narrower jobs may also mean higher labour turnover. Capital costs, labour force flexibility and industrial relations will all be affected by decisions made on job breadth. For every job there will be from the entrepreneur's point of view some optimum breadth where total costs will be at a minimum.

Turning to worker preferences one can utilise a similar approach. Workers will be concerned with changes in job design as often it may mean deskilling a process. Increased production through changed design could mean less employment overall, or cause changes in the wage structure. This is a complicated relationship as increased productivity should mean increased reward. Deskilling may however derestrict entry to a previously exclusive occupation, thereby leaving open the possibility of reduced earnings. An attempt to narrow job breadth may simply increase the exclusionary policies of the unions involved.

Increasing work scope may make the person involved more attractive on the labour market, and make them more adaptable to new situations.[12] The worker may consider that the extra training needed is justified by the added benefits, but he may equally decide that it is not justified. Narrow jobs will have psychic costs for the worker. These will vary for each person, but as a general rule will increase, with the tedium or lack of purpose to the work. Low status jobs will have high psychic costs unless compensated for by high wage rates. The worker too, will have some optimum job breadth where costs are minimised and benefits maximised.[13]

The above concepts must be translated into a model which will determine optimum job breadth, training breadth, and division of training costs. In this model training breadth will become an explicit variable. Scoville replaces the general/specific concept, with a continuum of narrow to broad training. The narrowest relevance of training will be to the minimum needs of a job, while the broadest will be to the economy.

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Excess training is that beyond the minimum needs of a job. From the entrepreneur's point of view it is this training which should enable the worker to reach Experienced Worker Standard (EWS),[14] as soon as possible. From the worker's point of view, it is this training which will make him more attractive on the labour market. The extent to which excess training is carried out will depend on how training costs are split up.

To replace the general/specific concept is to go too far. Instead it may be supplemented by the narrow/broad continuum. Figure I.1 shows the type of work spectrum involved.
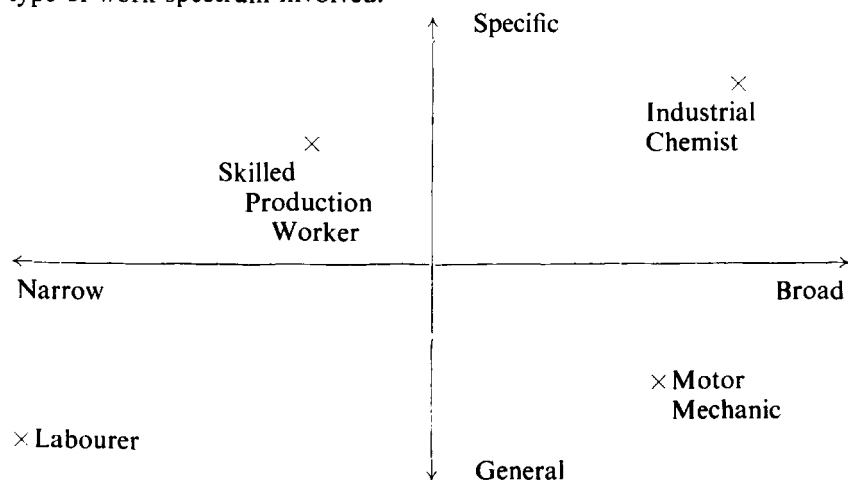
Specific

× Industrial Chemist

× Skilled Production Worker

Narrow ← ──────────────────────── → Broad

× Motor Mechanic

× Labourer

General

Fig. I.1—The work spectrum

Any job may be classified into any one segment, each job having a unique position. For every occupation there will be a trade-off between the specificity of the job, which is relatively inflexible, and the job-training breadth which is much more flexible. This trade-off will depend on the costs and benefits to workers and management. It is not the fixing of an exact position for each job that is important, but the underlying concepts.

A model which will determine job and training breadth relies to a great extent on the relation between the two. Figure I.2 represents the employers position.

The 45° line represents all minimal job/training levels and no combination beneath this line is feasible. Job breadth is restricted by the underlying technology used in producing a particular good. The segment TT_1 indicates the scope of job breadth possible, given the technological constraint. Employers iso-cost curves may be drawn based on cost distribution. They show unit production costs remaining the same for differing job and training breadth combinations. The shape indicates how increasingly broad training gives the advantage of less supervision and more flexibility. After some point this advantage disappears. To produce a certain quantity the entrepreneur will choose the minimum cost feasible solution, point O_m on Co. Line O_m-O shows the solution range as breadth is increased.
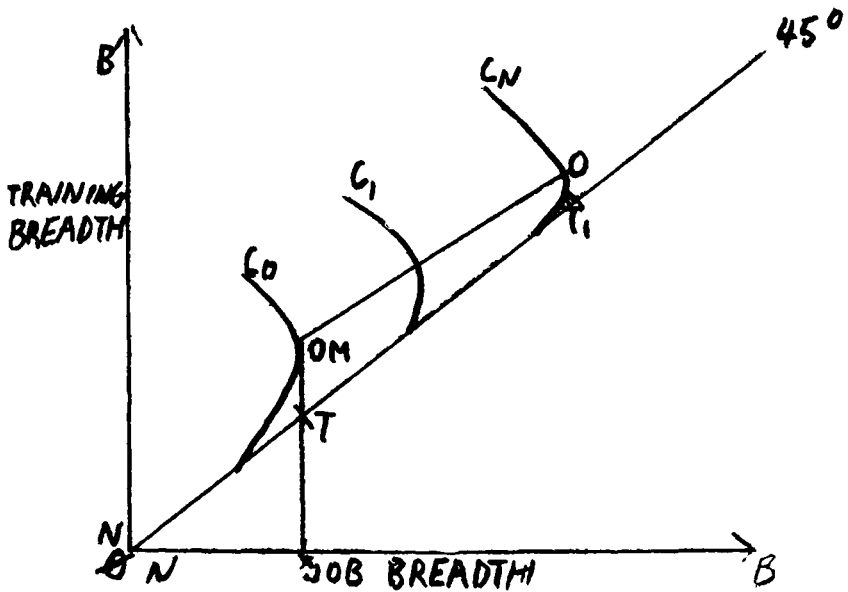
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Fig. I.2—Employer's Equilibrium in determining job and training breadth.

A similar method is used to analyse workers' preferences. Here too the limits of feasibility are prescribed by the technological constraint. A series of iso-benefit curves may be drawn (see Fig. I.3) reflecting the assumption that for a given job breadth, workers will have increased economic and psychic benefit, from training in excess of the minimum requirements for the job. Beyond a certain point the advantages involved are outweighed by the increases in training costs which the worker may have to bear. The best level for the worker to attain is point OL and the reaction curve for narrower jobs in OL-O.

Having observed both management and workers reactions the two preference curves should be united, with T-T_1 again the technological constraint.

Here we make the assumption that employers bear all training costs. This alters the shape of the iso-benefit curves, as with no costs borne by the worker, benefits to him from excess training would continue almost indefinitely. Were the workers to bear some costs then the shapes would not alter and equilibrium would be where both sides gained maximum benefit and minimum costs. We must bear in mind also that the shape of the curves depends on the availability of alternative jobs and the distance of these along the 45° line, i.e. the technical comparability.

In Fig. I.4 costs to management are minimised at OM, which gives a job breadth of JO and training breadth to. T-to reflects the amount of training desirable beyond the minimum requirements for the job. Workers
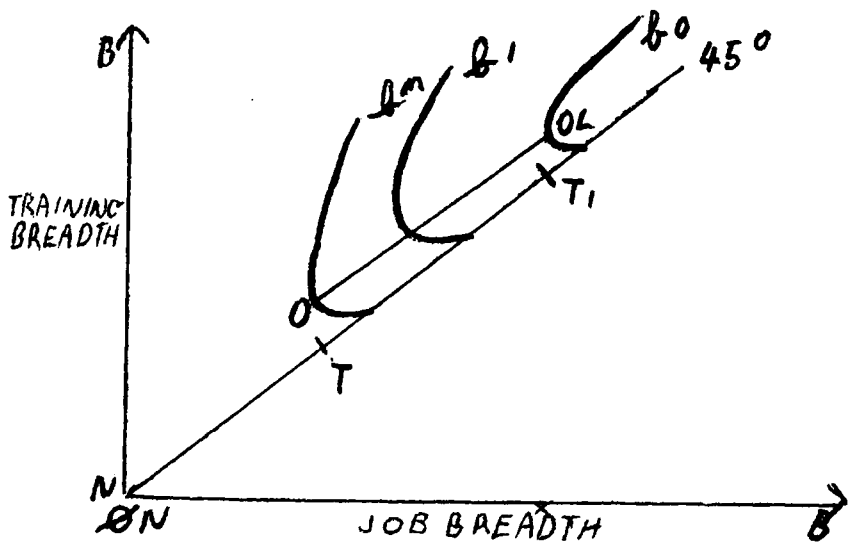
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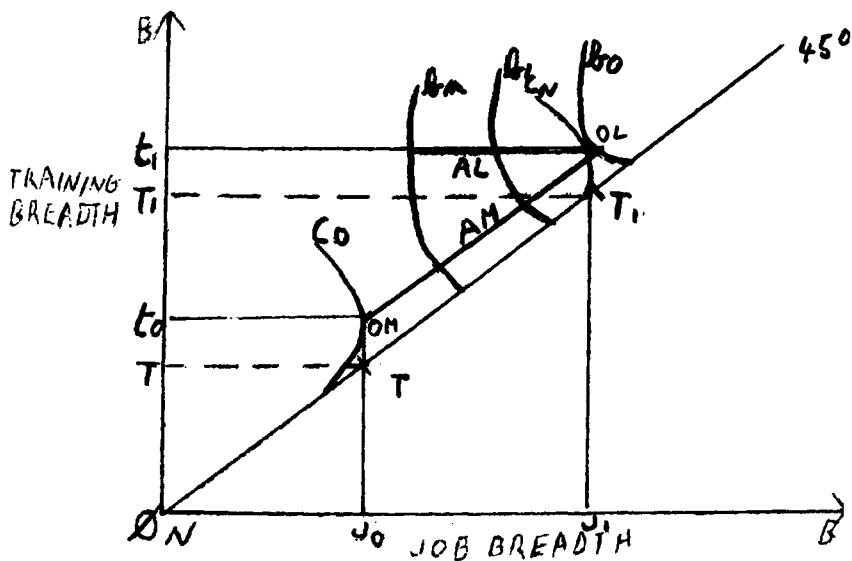Fig. 1.3—Workers Equilibrium in determining job and training breadth.

Fig. 1.4—Total Equilibrium.

would prefer to be at point OL (or above it) on their highest possible net benefit curve. Their optimal breadths are much higher at J_1 to t_1. The locus of alternative points for both groups at nonoptimal job breadth are shown by AM and AL. This situation is one where benefits to workers are much higher than those to management. If AM lay above AL then benefits

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would be reversed. These cases bear close resemblance to the benefit distribution resulting from "general" and "specific" training. Fig. I.4 represents the general situation, although here this means general within as well as general between plants.

The emergence once more of the Beckerian categories does not mean that we have achieved nothing. If job breadth JO is chosen, something highly likely in times of labour surplus, then the entrepreneur will be prepared to finance training up to to ?, *regardless* of its generality or specificity. Those factors that influence cost, such as work force flexibility and labour turnover, are now an integral part of the determination of job and training breadth, and of the division of training costs. Workers would be prepared to pay for more training up to tt. If AM lay above AL, as would happen with specific training, then the workers would be unwilling to contribute anything. The Beckerian analysis will hold for specific training, which means that the earlier conclusion of employers paying for all training in rural areas, must also hold.

This analysis may be further extended to place it in a regional setting. If T is the minimum level of training required to enter a job, albeit not at EWS, then any training up to this point is an additional cost to be borne by the entrepreneur. Intuitive reasoning suggests that if workers can be recruited who are trained at a level close to T, the employer-borne training costs will be reduced. It is impossible to say where, on the segment $\varnothing$-to, the heaviest costs lie, but it is reasonable to assume that for many jobs, initial training will be the most expensive. In rural areas, workers will often be employed, whose industrial training and experience is of the narrowest possible nature. If a firm is accustomed to hiring workers whose abilities put them on or near point T, then locating in an industrially under-developed area will cause a substantial increase in training costs. If a location policy is to be successful, then there must be available a supply of workers trained up to a level close to the technological requirements of probable jobs. It is the rural worker and the man who has never worked who will need the most training, as those who have had experience of any regular industrial work will be approaching point T. The Government seems the best agent to provide this essential general training, in an area of rural decline.

In Fig. I.4 equilibrium was reached through seeking optimal job and training breadth for every combination of cost sharing by management and workers. The training cost distribution of each job determines a level of workers' net benefits and management unit costs, as seen in Fig. I.5.

Point Y represents workers minimum acceptable benefit and Z the maximum cost which management can bear or pass on. The intersection of the curves determines the equilibrium cost distribution. Scoville postulates that if the curves do not cut then the job will not exist. This is seen in Fig. I.6 and represents the problem found in rural development areas. If a firm has had the experience of low training costs, then it will not be geared to accept a substantial increase. Other costs such as transport will have increased also, in a move to a development area. The net result is that the maximum cost which a firm can bear is substantially lower, as
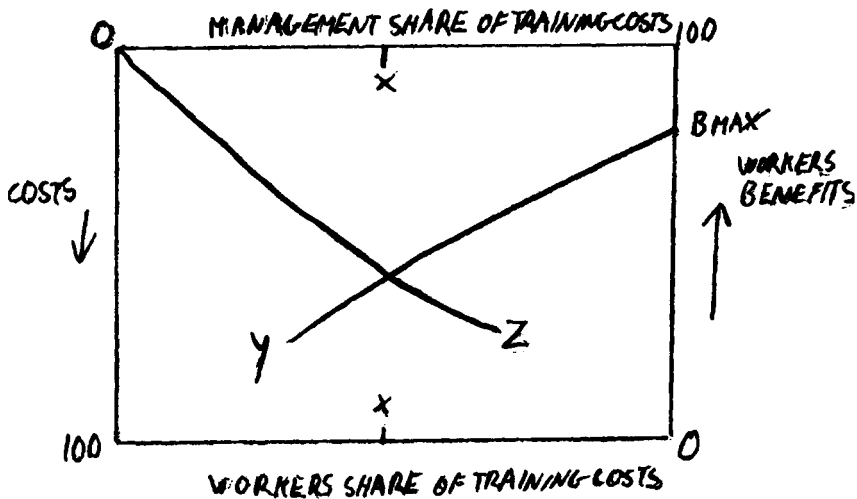
Fig. 1.5—Cost/Benefit Equilibrium for training.
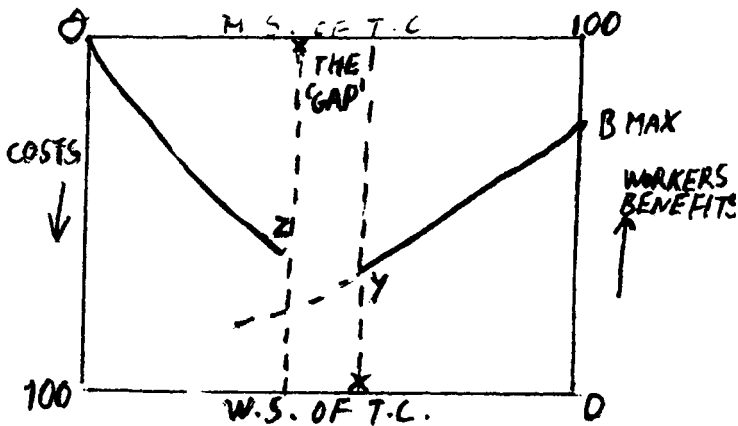
Fig. 1.6—The Training Gap.

will be the share of training it is willing to finance. Point Z moves North West. Point Y may move also. Heavy unemployment may suggest that this should be South West, but it may move North East as the rural worker will have high psychic costs in taking a factory job. In addition substantial unemployment benefits and untaxed casual labour can facilitate an eastward shift and make the unemployed person reluctant to undergo

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training. In either case the curves will not cut and the job will not exist. This is the training gap, a gap which the Government must bridge.

The shape of the iso-cost and benefit curves may alter in an isolated labour market, although it is virtually impossible to determine the balance of the movement. On the one hand, broader training may not bring the usual benefits of decreased supervision, while on the other, narrowed jobs may bring a severe increase in labour turnover. Problems of seasonal absenteeism and turnover may exist also. Industrial relations problems may be less acute in a rural area, but an inflexible labour force may outweigh this advantage. The net result of these features will be a shift in the shape and position of the curves probably to the detriment of training. Higher costs to management and higher psychic costs to workers make investment in training more uncertain than elsewhere, and the entrepreneur may play safe and keep job and training breadth to a minimum, if the job exists at all. It will be in the short-term and long-term interests of the rural development area, for the Government to provide the general training necessary, to make the labour force as "normal" as possible.

II

This section consists of an economic analysis of the Basic Operatives Course (BOC) run at Enniskillen GTC since August, 1970. It has been postulated above that there is a need for Government intervention in training, not only in the field of specific training, but also that of a general nature. If one looks at general training in the light of a Scoville-type analysis, then it can be interpreted as attempting to fill the training gap between the minimum technical requirements of many semi-skilled industrial jobs and the abilities of the rural unemployed. The Enniskillen course was designed by the Industrial Training Service (ITS) to give a basic industrial training to those whose work experience was limited to that of a rural nature, or who had never been in employment. It is a twelve-week course where trainees get a particular insight into one factory job, e.g. injection moulding, and experience of four or five others. It is not a simple matter of training machine operators, as the technique used is discovery learning, and areas such as job analysis, record keeping and interview techniques are all covered. The trainees are encouraged to discuss the problems they find in industrial work, and also the best methods of finding a job. It is training in a truly general sense and in theory at least, should help the rural workers to get on a par with their industrial counterparts. To use Eckaus's[15] criteria, it is a mixture of GED and SVP with an emphasis on the latter. This study is aimed at perceiving whether or not this type of training can bear fruit. In theory it is necessary, and the problem now is to discover whether or not it is in reality, feasible.

(A) Framework of the Study

Up to April 1972, 53 trainees had started the course, with eight per session the maximum. It is not a block entry, but continuous as vacancies arise. Several criteria of the success or failure of the course had to be established. Some were from the trainees' results alone.

Six major areas were examined:

1. Were the trainees themselves in any way different from the control groups as regards age, background and previous employment experience?

2. After training, did the employment record of participants differ significantly from before in:
    (a) factory work?
    (b) overall?

3. Did the employment record of trainees differ significantly from that of the control groups both before and after training?

4. Can training success be claimed through any other criterion such as increased job tenure?

5. Was labour mobility improved by BOC training?

6. Does the course represent "a last chance" for the unemployed?

The question of financial costs and benefits was not examined, as the problem at hand is the qualitative improvement of the unemployed. Ziderman[16] estimates the internal rate of return for GTC's to be as high as 30 per cent, with an average pay back period of 22 months. These figures are based on the assumption of average UK weekly earnings, and of 80 per cent remaining in employment in the three years after training. For Northern Ireland it is not unreasonable to assume that lower earnings and worse placement rates will reduce the overall benefits. The position varies greatly with each type of training course, and BOC must be the most problematic of all.

Information used in this study comes mainly from the records of Enniskillen GTC and Enniskillen Local Employment Office (LEO). Additional material is from ITS documents. Individual employment cards give details of interviews with each person. In three cases individual cards were mislaid, and four trainees had moved to another area.

(B) *The Fermanagh Area*

(i) *Population.* The 1966 Census showed the population of the county to be 49,886, a decline of 3·2 percent on the 1961 figure. Population density at 0·12 persons per acre, was the lowest in Northern Ireland. Rural depopulation is continual, the only exception being Enniskillen Rural District, which receives the overflow from Enniskillen Municipal Borough. The total dominance of the county by Enniskillen with its 7,000+ population, and the efforts to make Lisnaskea and Irvinestown (1,000+) counter magnets must be borne in mind when considering the area.

Fivemiletown and several smaller villages although not in the county, come under Enniskillen LEO. Because of this, census figures are not entirely compatible with those of the LEO.

(ii) *Employment*. In 1966, 48·6 per cent of the 12,370 working males over age 15, were involved in agriculture, forestry and fishing while only 7·8 per cent were in manufacturing. In 1961 52·7 per cent were in the agricultural sector. The drop between 1961 and 1966 is 1,500. The 1961 Census also showed that 52·7 per cent of workers in this sector were age 45 or over.

Male unemployment in 1966 was 14·7 per cent. Seasonal trends are clearly visible in the employment pattern which fits that expected in a rural area. Construction too affects the seasonality of the figures.

(iii) *Journey to work*. An additional factor is that only 3·5 per cent travelled to work in Fermanagh by public transport (1966 Census figures). The Northern Ireland average is 27 per cent. Approximately 27·3 per cent travelled by private car, probably due to the inconvenient routes that rural workers must take. Trainees may have the disadvantage of not having workmates with whom to get a "lift".*

(C) *The study itself*

(i) *Method*. A simple before/after examination of BOC trainees would be inadequate as a means of assessing the value of the course. Increased employment must be accompanied by increased financial gain, and it will be assumed that this happens, the size of the gain depending on job type. Sewell[17] points out that the major criticism of before/after studies is that what we really want to know is how the participants would have fared had they not undergone the course. To overcome this problem control groups are used, whose characteristics are similar to those of the trainees.

A sample of trainees was not necessary as only 46 of the 53 had complete records available. This figure is within the limits of a statistically "small" sample. To obtain control groups, a technique similar to that used by Borus[18] and Stromsdorfer[19] was adopted. One exception was that their distinction between those who did and those who did not utilise training, was not made, as the course does not aim to teach specific skills. The three control groups are

(a) those turned down for the course (TDs)
(b) those accepted who did not start (DNSs)
(c) those who did not attend any interviews (DNAs).

The three groupings should allow for any difference in motivation or ability from the trainees. Demographic differences such as age and previous occupation will not be removed by regression

*Fermanagh has the highest percentage of "other means" of travel to work (42·6 per cent). This excludes public transport, private cars and buses, cycle and foot. What the "other means" are is not clear.

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techniques, as Borus did. This is because some of these character-istics are important pointers towards training benefits and worthy of closer examination.

(ii) *Group Characteristics.* Of the 193 males called for interview and BOC tests between July, 1970 and March, 1972, 44·6 per cent were accepted. 33·7 per cent turned down and 21·7 per cent failed to attend. Of those actually tested the acceptance rate was 56·5 per cent. Sewell[20] quotes US rejection rates as varying from 17-64 per cent so the Enniskillen figure seems average. Each control group had some untraceable records, and the final numbers in each were:

TDs—51; DNSs—31; DNAs—34.

(a) *Trainees.* These men reflect the general trend of sectoral unemployment in the area, with farm labourers and labourers representing 57 per cent of the total. These terms are fairly flexible and the proportion of actual farm labourers is prob-ably much higher. The factory worker figure of 20 per cent includes those placed in this category who have never actually been in factory work. Emphasis is placed on training the younger worker, especially the 18-21 age group which represents 32·6 per cent of the intake. The rural/urban* distribution of participants is 58·7/41·3 per cent. The urban figure is considerably higher than for the control groups except the DNSs.

(b) TDs. This category has the highest percentage of labourers and farm labourers, both totalling over 82 per cent. The highest concentrations are in the 22-26 and 32-41 age groups. Only 19·6 per cent of TDs are under 21 and 23·5 per cent of those turned down are town dwellers, nearly 18 per cent less than the trainees figure.

(c) DNSs. This group has the highest percentage of labourers and smallest of farm labourers. This suggests that those who fail to start are the labourers who find work easily. The urban percentage is quite high at 38·7 per cent while the age distribution is dominated by the 19-21 group (41·9 per cent) and the 22-26 group (29 per cent). The LEO interview sum-mary of one of these workers reads: "He did not attend for training at the GTC because he prefers outdoor work and because there are unlikely to be suitable vacancies for those who are trained".

(d) DNAs. These men should be the least motivated of all to train. Labourers and farm labourers constitute nearly 80 per cent, and factory workers have the lowest percentage of

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*Urban here means living within the boundary of a town/village even though its population may be as low as 100.

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all groups. The age structure has a fairly even spread and the rural/urban split is the same as for the TDs.

The above groups have many similarities and group size would need to be much larger to draw any hard and fast rules about each. The problem of almost every man considered is summed up by one who did not attend for BOC tests; who had never worked in a factory; and who did not in the long run find any work at all. "I have been promised a job in Kent Plastics as soon as a vacancy comes along, if I took the job in the GTC it would knock me out of the chance of a better job, with of course better money. Also, the GTC cannot guarantee me a job when I have my training done, so why should I take something which would only leave me in a very bad position".

These kind of attitudes coupled with a natural antipathy to indoor work, highlight the problems of, and the necessity for, a basic introduction to the industrial environment.

(D) *Results:* (i) *Before/after cnclysis*

(a) *Methcd.* Continuous entry and small numbers of trainees made it impossible to look at one intake. The method used was to look at each man's employment record from 1968 or from when he entered the labour market. Total numbers of weeks in work was then turned into a percentage of total time available. The arithmetic mean was then derived for the whole group. The same method is used for both the before and after periods. The main problem is that recent trainees will have been in the labour market only a short time, and a biased result could emerge. In no case is anyone with less than three months "after" period included, and it was found that dropping those with between three and six months experience did not alter the results significantly. The average number of weeks of pre-course labour market time examined is 158 weeks, and the post course figure is 51 weeks. A follow-up study seems essential.

(b) *Job Tcnure.* The BOC "philosophy" should in theory lead to a more satisfied worker who would remain longer in a job. The results seem to bear this out. Average length of job tenure before training was 42 weeks and after was 34 weeks, out of periods of 158 and 51 weeks respectively. These figures include 19 men who had not changed jobs at all. For TDs the equivalent figures are 31 weeks before and 15 weeks after.

(c) *Mean Times Employcd.* The mean before and after percentages of all trainees are significantly better than those of the control groups (Table II.1). The pretraining figure suggests that it is those who are most employable who are accepted for BOC.

The after results show the trainees employment to increase by 10 per cent to 62·11 per cent, which is 20 per cent higher than the DNSs, the nearest control group. It is nearly 27 per cent better than the TDs. Extra assistance to find work after training may explain some of the increase, but it does not explain the worsened performance of the control groups.

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The attitude of the LEO to those who have failed or been unable to make use of their "last chance" may be the reason. There is an unconscious unwillingness to put more effort into the DNAs and DNSs, when an employer too may find them unreliable. The TDs may simply go to the bottom of every list.

(d) *Completers/Drop-Outs.* An unusual result appears when trainees are split into those who completed or left the course for a factory job, and those who simply dropped out. The drop-outs have a worse pre-training record than all groups except TDs, but it is their subsequent record that is disturbing. It is the best of all groups, better even than those who completed the course. This may suggest that it is just the name BOC rather than the actual course content that is important. Some other factors should be considered:

(i) Drop-outs number only twelve and could give a biased result;

(ii) Nine of the twelve are of rural origins, and eleven are labourers of one sort or another. Some experience of factory work may have made these men more settled in their old jobs.

(iii) The BOC training in teaching men to "sell themselves" may have been put into practice by this group.

Drop-out rates are similar to US figures quoted by Sewell.[21] From August 1970, to August 1972, the rate was 26·67 per cent and from then to April, 1972, it was 25·22 per cent. If the period October 1971, to April, 1972, is considered, then the rate decreased to 10·53 per cent. Drop-out rates at this time were high in more specific courses, yet BOC applications increased. The rundown in Fermanagh's sole engineering firm may explain this.

Only one completer was a farm labourer. Removing the drop-out element gives an almost equal percentage of labourers and factory workers. A dozen men changed to factory work when it was in short supply, and their mean percentage time employed is almost 95 per cent. These figures give some indication of the possibilities for BOC training.

(e) *Six Month Situation.* Table II.2 shows the situation of each trainee six months after completing or dropping out from BOC. The Table does not therefore represent any one point in time. Speed of obtaining work is important to BOC trainees. Length of skill retention is uncertain, and discouragement or embitterment may set in if the new ideas learnt cannot be put to use. The longer the period of unemployment, the more certain is the return to labouring. Only ten trainees got work immediately, but only five remained out of work after six months. Momentum appears to be lost after three weeks unemployment, and then the chances of 3-6 months without work are good. Immediate employment was usually found in factories while those unsuccessful had to rejoin the queue for labouring. If factory work becomes more widely available in the future, it seems improbable that those rejected by the factories will be called on. Instead, freshly trained workers would be much more attractive to an employer.

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(a) *Method*. This test is one particularly applicable to small samples,* as used in this survey. It is a test used to assess whether or not a significant change in results has occurred after an event such as the BOC course. The formula is:

$$t = \frac{\bar{d}\sqrt{\eta}}{s}$$

$$\text{where } s^2 = \frac{\Sigma(d - \bar{d})^2}{\eta - 1}$$

d = the difference between the "before" and "after" result of each trainee in terms of mean percentage time employed. As a small sample is being used the t test is appropriate, although it is assumed that population distribution is almost normal. Test results (at the appropriate number of degrees of freedom) are then compared with a t distribution table. The hypothesis that the test is used to accept or reject is that BOC improved the employment performance of trainees. It must be remembered that acceptance of the hypothesis is not proof, and that the mean percentage time concept may be invalid.

(b) *Results*. These are in four groups. Tables II.3 and II.4 concern all trainees, and are separated into six monthly groups since completion, one being cumulative and the other independent. Only when those with less than six months in the labour market are excluded, can the hypothesis be totally accepted. For those with more than 18 months experience there is a low level of acceptance. This implies that the first six months are a lean time, and only after 18 months does a steady improvement occur. Follow-up studies are certainly needed. Table II.4 with its non-cumulative totals tends to confirm this. For those with 6-12 months experience the hypothesis is accepted at the 1 per cent level.

Tables II.5 and II.6 deal exclusively with the group with more than 18 months post-course experience. For them the first six months is fruitless, but for the next period the hypothesis can be accepted. The cumulative time result also indicates that after six months an acceptable level of significance appears.

From these tables it is possible to draw some tentative conclusions:

   (i) Better employment results may only be seen after six months.

 (ii) After 12 months the short duration of labouring jobs makes its presence felt.

(iii) After 18 months an improved employment pattern emerges.

(iv) The test results depend on those who remain in their old jobs, and too few get stable factory work, to ensure results acceptable at the 5 per cent level at least.

(c) *An alternative explanation.* The pattern of peaks and troughs seen in the "difference" test results bears a similarity to the unemployment pattern in the Fermanagh area. As there is no block entry to the course it is difficult to link conclusively test results to seasonal unemployment, However, one can follow the progress of the first eight on the course. Their first six months in the market was at the time of peak unemployment therefore least success in sectors other than manufacturing would be expected. The next period would then cover the summer low and so on. There is some evidence therefore that cyclical variations in unemployment rates do make a difference to the "difference" test results.

(E) *Other Features*

(i) *Mobility.* One criterion of the success of training is the willingness of the trained person to go out and find work, be it in his local area or elsewhere. McKechnie[22] found geographical mobility to be a major side benefit of training especially in the case of young unmarried workers. If this were a result of BOC training in Fermanagh it would be a very acceptable one. The difficulties of inducing a rural worker to migrate are well known and even if movement takes place it is often temporary. Between 15 and 20 per cent of each control group had spent some time working in Britain, while a smaller percentage had worked elsewhere in Northern Ireland.

The mobility of BOC trainees is not encouraging. Only two of the 53 in the study had moved to Britain, and two to other parts of Northern Ireland. One of the latter pair travels back to Fermanagh each weekend. There is no significant difference between the mobility of the control groups and of the trainees. In interviews prior to training, far more indicated their willingness to move than those who actually did so.

(ii) *Employer Attitudes.* There is a need to ascertain whether or not BOC makes a man more attractive to employ, or whether failure to be selected makes a man less attractive. There is a need to see whether or not BOC graduates reach EWS more quickly than the average newly-employed worker. If EWS can be reached more quickly than normal, there is an incentive to employ these men. An ITS survey on employer attitudes is at present being carried out.

(iii) *The Economic Situation.* It has been seen that employment results depend to some extent on seasonal variations in unemployment, due to the numbers who must revert to their old occupations. The Northern Ireland Economic Report on 1970 was optimistic in its hopes for manufacturing industry in the province. It is worth considering what BOC could achieve if new jobs were available. If it remained at its present size it could not meet the needs of new industry, unless jobs appear at a steady flow. In this case BOC men could get factory work, and if the course achieved the status of a qualification, then it could have excellent results. Non-trainees would be placed in a more difficult position. For all industrial

employers in the Fermanagh area there is a shortage of semi-skilled labour at all times, yet the likely economies in training that are to be had from employing BOC trainees are not being utilised.

(F) *BOC Achievements*

In summing up the results of this pioneering course in general training, there are two traps to be avoided. The first is in dismissing it as too small to have any worthwhile impact on the unemployed. The other is in placing too much emphasis on the design of the course and its advanced teaching methods. Somewhere between these limits, the course must be placed in perspective. The results that have been found can be related to the original question posed:

(i) Those accepted for training are the "cream" of the unemployed. Their past work records are better than the control groups, more are from urban areas, and they are generally younger than the rest.

(ii) Post-training employment records were significantly better than before training. An absolute improvement of nearly 9 per cent was found.

(iii) Post-training records of BOC graduates were significantly better than those of the control groups. Employment time ranged from 20-27 per cent more than the rest.

(iv) There are good indications that trainees do remain longer in their jobs and are more settled than before the course. There is a relationship here with the type of job obtained.

(v) Trainee mobility is very low, and no better than that of the control groups.

(vi) Those turned down for BOC have poor employment records after their "failure". There is a tendency to regard the course as a last chance, and that those not accepted for it must be almost unemployable.

To sum up, the benefits of such general training are not flamboyant, and it may not have been instrumental in bringing new jobs to the area. As part of the manpower package it may have acted as one incentive to industrialists, and it has made slow but steady inroads into the problems of rural unemployment.

There is theoretical justification for Government intervention in industrial training, and not just training for specific firms or projects. General training is feasible, and has an important role to play in the long-term adaptation of a rural area to the needs of industry. Regulation 9 of the EEC Social Fund[23] facilitates training the unemployed, but insists on those trained taking up relevant work for at least six months of the following year. This may cut out the creation of a pool of skilled unemployed, but generally trained workers would get much wider scope from the word "relevant". EEC emphasis has always been on labour mobility out of underdeveloped areas. The future of general training, with all its unexplored possibilities, must hang somewhat in the balance ,in the "New" Europe.

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TABLE 2.1

Mean percentage time employed of those participating in the Enniskillen BOC course, August 1970—April 1972, and of TDs, DNSs and DNAs

	Trainees (Total)	Completers*	Drop-outs	TDs	DNSs	DNAs
Before	53·32	56·69	42·95	39·61	45·28	47·46
After	62·11	62·58	67·13	35·82	43·40	39.65
Overall	57·72	59·64	55·04	37·72	44·34	43·56

*And early terminations to take up a factory job.

TABLE 2.2

Unemployment experienced by each BOC trainee in his first six months after the course

	None	One week	2	3	4	5	6	7	8	9	10 weeks — 3 mths	3 mths +	4 mths +	5 mths +	6 mths	Total	In lab. mkt. <6 mths	Grand Total
Enniskillen	4	0	0	1	0	0	0	0	0	0	1	0	0	0	0	6	3	9
Other Urban	2	0	1	1	0	0	0	0	1	1	0	0	0	0	2	8	2	10
Rural	4	2	0	0	1	0	0	1	1	1	2	0	3	6	3	24	3	27
									Moved elsewhere in N. Ireland							1	0	1
									Moved to G.B.							3	0	3
																		50*

*3 trainees had no records available.

TABLE 2.3
Results of the "Difference" test

A = Hypothesis that the BOC improved employment—Accepted
R = Hypothesis that the BOC improved employment—Re·ected

No. of trainees	Time since course	Confidence level ·10	·05	·01	·001
(10)	>18 months	A	R	R	R
(23)	>12	R	R	R	R
(36)	> 6	A	A	A	A
(45)	> 3	R	R	R	R

TABLE 2.4

No. of trainees	Time since course	Confidence level ·10	·05	·01	·001
(10)	>18 months	A	R	R	R
(13)	12-18	R	R	R	R
(13)	6-12	A	A	A	R
(9)	3-6	R	R	R	R

TABLE 2.5
"Difference" tests (contd.)

Results from the 10 trainees who were more than 18 months after completion

Time period after course		Confidence level ·10	·05	·01	·001
First six months	... ...	R	R	R	R
Second six months	... ...	A	A	R	R
Third six months ...	... ...	A	A	R	R

TABLE 2.6

Time since course				Confidence level ·10	·05	·01	·001
18 months ...	...	...	...	A	R	R	R
12 months ...	...	...	...	A	R	R	R
6 months ...	...	...	...	R	R	R	R

BIBLIOGRAPHY

(1) The Economist, *EEC Supplement*, January 1, 1972, pp. 27-28.

(2) R. S. Eckaus, "Economic Criteria for Education and Training", *Review of Economics and Statistics*, Vol. 46, 1964.

(3) An example of the effective use of this terminology in assessing the education and training needs of a population is: B. W. Wilkinson *Studies in the Economics of Education* Canadian Dept. of Labour, Occasional Paper No. 4, Chap. 3.

(4) G. S. Becker, *Human Capital*, Chap. 2, pp. 11-30, 1964, National Bureau of Economic Research.

(5) A Marshall, *Principles of Economics*, Book 4, Chap. 6, pp. 204-219.

(6) M. Oatey, "The Economics of training with respect to the firm", *British Journal of Industrial Relations*, March, 1970.

(7) R. S. Eckaus, "Investment in Human Capital—A Comment", *Journal of Political Economy*, 1963, pp. 501-5.

(8) B. O. Pettman, "The Industrial Training Act and the I.T. Board—History, Machinery, Progress and Criticisms". *Institute of Scientific Business, Report and Survey Series*, 1971.

(9) J. G. Scoville, "A Theory of Jobs and Training", *Industrial Relations*, Vol. 9, 1969-70, pp. 36-53.

(10) For example: R. J. Lancaster "A New Approach to Consumer Theory", *Journal of Political Economy*, April, 1966, pp. 132-157. M. C. Benewitz and A. Zucker, "Human Capital and Occupational Choice—A Theoretical Model", *Southern Economic Journal*, January, 1968.

(11) M. J. Piore, "The Impact of the Labour Market upon the Design and Selection of Productive Techniques within the Manufacturing Plant". *Quarterly Journal of Economics*, November, 1968, pp. 602-620.

(12) J. F. Biggone and P. A. Steward, *Job Enlargement—A case study*, Bureau of Labour and Management Research Series, No. 25, State University of Iowa, July, 1963.

(13) Scoville presents rigorous mathematical equations of employers and workers preferences. The models may be represented in graphical form also. *Op, cit.*, 41-47.

(14) For a fuller exposition of E.W.S. see: B. Thomas, J. Moxham, and J. A. G. Jones, "A Cost-Benefit Analysis of Industrial Training", *British Journal of Industrial Relations*, July, 1969, pp. 231-264.

(15) R. S. Eckaus, *op. cit.*

(16) A. Ziderman, "Costs and Benefits of Adult Retraining in the UK", *Economica*, November, 1969.

(17) D. O. Sewell, "A Critique of Cost/Benefit Analyses of Training", *Monthly Labour Review*, September, 1967.

(18) M. E. Borus, "A Benefit/Cost Analysis of the Economic Effectiveness of retraining the unemployed", *Yale Economic Essays*, Vol. 4, No. 2, 1964.

(19) E. W. Stromsdorfer, "Determinants of Economic Success in Retraining the Unemployed—the W. Virginia experience", *Journal of Human Resources*, Spring, 1968

(20) D. O. Sewell, *op. cit.*

(21) D. O. Sewell, *op. cit.*

(22) G. R. McKechnie, *Retraining and Geographic Mobility—An Evaluation*, University of Wisconsin, Unpublished Ph.D. Thesis, 1968.

(23) EEC Commission, *Comité du Fonds Social Européen, Texte du reglement*, No. 9.