PROBLEMS

Education, Training and Economic Performance: British Economists' Views 1868-1939

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Introduction

The 'causal' links between education and training and economic progress have filled the pages of recent publications. The relief of bottlenecks, labour market flexibility, lowering of real costs are the sort of points made for the case that "Britain's place in the world is going to rely increasingly on her technological skill. We cannot afford to have people working well below their capacities because of inadequate training and skill".[1]

The argument that education and training offer a key to the lock of international competitiveness is by no means new. Almost the entire discussion was anticipated by an anonymous author in 1690.[2] Among his insights we may note that the British came "infinitely short of other countries in our Mechanicks and finer Arts",[3] and were "now supplied from foreign parts with divers Commodities which, if the kingdom were replenished with Artizans they would furnish us with here at home".[4] It was obvious "How fond and ambitious Men are, in Foreign Countries, of learning Arts and Mechanical

[1] *The National Plan*, (H.M.S.O. 1965), p. 10.

[2] ANON., *A Discourse of the Necessity of Encouraging Mechanick Industry*: Wherein is plainly proved that Luxury and the want of Artizans Labour became the Ruin of the four Grand Monarchies of the World, in the Former Age, and of Spain and other Countries in This: and the Promoting of Manual Traders the rise of the Dutch, Germana, etc., (London, 1690).

[3] *Ibid.*, p. 26.

[4] *Ibid.*, p. 27.

Employments".[5] He observed that while German youths required only a four year apprenticeship, the British needed seven because they were poorly educated before their apprenticeship began. The Hansa towns limited the study of liberal sciences and obliged their inhabitants to engage in commerce and industry. Thus he felt it was plain that the returns to society were greater from such pursuits than educating the poor. Indeed, a statute was recommended to ensure a school leaving age of fifteen. As for labour mobility, it was necessary to consider " What Vocations and Employments every Part of the Kingdom is most fit and proper for; and where there is not Employment in Manufactories, if it be by the sea, to employ them in Fishing or Navigation; or if they take not to either of these, and their own Country affords them not other Employments, that then they should be removed to other parts of the Kingdom ".[6]

The remainder of this study will consider the advocacy of more training as a cure of Britain's economic ills during the period 1868 to 1939. British economists were vociferous in the period and we can compare the tenor of their arguments with that of the 1690 author. Set against the views of economists are those of businessmen, educationalists and Official Reports — a cross-section of current opinion.

There are two strands of thought in what follows: the continual discussion based on unsupported assertion; and the scepticism on the part of the practical men when in receipt of the expert opinion. To illuminate these themes we have drawn upon representative sources from a vast literature which it would be impossible to chart exhaustively.

The Background 1868-1890

Between the Great Exhibition of 1851 and the Paris Exhibition of 1867, British manufactures' excellence in exhibits fell from being first in almost all the categories to first in a mere ninth. Whilst the earlier Exhibition simply confirmed the existence of serious foreign competition, the latter put Britain's declining industrial power into sharp focus. The result was a belief in the superiority of the training of continental workers and consequent national intervention in the field of technical education. [7,8]

It will prove useful to outline some points of unanimity in those enquiries which eventually led to legislation.

The first general theme was that extra training would not be useful for manual workers and that it should be carried on away from the workplace.

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[5] *Ibid.*, p. 12.

[6] *Ibid.*, p. 20.

[7] *The Next Step in National Education, Being the Report of a Committee* (London, 1927).

[8] Viz., the Technical Instruction Act of 1889.

The principle that technical schools should be a part-time supplement to the apprenticeship system was laid down by J.S. Russell in 1869.[9] Interestingly, on introducing the Education Bill of 1870, Forster commented that " It is no use trying to give technical teaching to our artisans without elementary education ".[10] The Select Committee Reports of 1868 [11] and 1884 [12] doubted if the benefits from technical schools applied to more than a few trades and questioned whether continental schemes had access to the extensive resources often supposed. The workers' view in 1868 was that it was useless " to attempt to thrust geometry down his throat if he knew nothing of arithmetic ".[13]

Secondly, it was agreed that the rapid progress of Continental industry was due to the scientific training of the proprietors and managers.[14] The Royal Commission was concerned that " control of the processes is left in the hands of men whose only rule is that of thumb..... ".[15] It was also lamentable that " belief in the efficiency of training of this *highest* character is..... small amongst those whom it will ultimately benefit ".[16] There was also recognition of the need for commercial and foreign language skills.

Unfortunately the major constraint here was secondary education which was " left to the mercy of chance ".[17] Such views may merely reflect the pervasive acceptance of Herbert Spencer's writings which may be summed up in the statement that " to all such as are occupied in the production, exchange or distribution of commodities acquaintance with Science..... is of fundamental importance ".[18]

Thirdly, the lack of trained manpower was not the sole cause of Britain's competitive disadvantage. Such factors as fashion, lower wages, absence of disputes, adaptability, longer working hours, tariff protection and success at pleasing their customers were listed by the Select Committee of 1868 [19] and the Royal Commission of 1884 [20] as alternative explanatory variables for the decline in British fortunes.

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[9] RUSSELL J.S., *Systematic Technical Education for the English People* (London, 1869), pp. 405-7.

[10] *Hansard*, 17th February 1870.

[11] *Report from the Select Committee on Scientific Instruction*, (1868).

[12] *Second Report of the Royal Commissioners on Technical Instruction*, (1884).

[13] E. FROW and M. KATANKA (eds.) *1868 Year of the Unions. A documentary survey*, (London, 1968), p. 33.

[14] Cf. *Select Committee* 1868, p. vii.

[15] *Royal Commission*, 1884, p. 223.

[16] *Ibid.*, p. 525.

[17] F.C. MONTAGUE, *Technical Education: a summary of the Report of the Royal Commission*, (London, 1887), p. 32.

[18] H. SPENCER, *Education: intellectual, moral and physical*, (London, 1905), p. 28.

[19] *Select Committee*, 1868.

[20] *Royal Commission*, 1884.

Reference to non-educational causation is noteworthy because then, as later, the link between education and economic performance was never demonstrated. Jevons felt it was essential to invest now in education to secure the future after our monopoly in coal supplies was ended by their exhaustion.[21] However, even Jevons and his followers based their belief in education on "the unanimous opinion of competent observers..."[22] and such unbacked assertions as "the cost of producing a skilled workman is less than one year's purchase of his increased value to the nation".[23] Marshall urged the State to "invest capital in men" on the grounds that a skilled man's value relative to his unskilled peer far exceeded the difference in their education costs and that these benefits did not accrue solely to the person educated.[24] But, without evidence.

The final point was that businessmen did not believe that they suffered from a lack of training. Swire Smith[25,26] in 1887 and Professor Ramsey[27] a year later both made this point. Indeed, the latter sympathised with the indifference of the managerial class to training as nobody had defined technical education nor specified which sectors would have benefited most from the attainment of such skills. Sir William Armstrong[28] also voiced the industrialists' sceptical opinion with his critique of "the vague cry for technical education". He felt that managers might benefit from general training but only provided it was not at an advanced level. Sir Lyon Playfair[29] rejoined with perhaps the first statement of the case for re-training but Armstrong insisted that new trades should be learned in the factory and not at the public's expense.[30] Even the National Association for the Promotion of Technical Education found the views of sampled businessmen to reflect a need for a few highly trained scientists rather than wholesale technical instruction.[31]

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[21] W.S. JEVONS, *The Coal Question*, (3rd. ed. edited by A.W. Flux, 1903).

[22] J.S. NICHOLSON, *The Effect of Machinery on Wages*, (London, 1892), p. 90.

[23] J.S. RUSSELL, *op. cit.*, p. 5.

[24] A. MARSHALL, "The Future of the Working Classes" (1873), in A.C. PIGOU (ed.) *Memorials of Alfred Marshall*, (London, 1925), p. 118.

[25] SWIRE SMITH, "Technical Education and Foreign Competition I", *The Westminster Review*, (1887).

[26] SWIRE SMITH, "Technical Education and Foreign Competition II", *The Westminster Review*, (1887).

[27] G.G. RAMSAY, "Technical Education", *Blackwood's Magazine*, Vol. CXLIII, (1888).

[28] W. ARMSTRONG, "The Vague Cry for Technical Education", *The Nineteenth Centry*, Vol. XXXIV, (July 1888).

[29] Sir L. PLAYFAIR, "Lord Armstrong and Technical Education", *The Nineteenth Century*, Vol. XXXIV, (September 1888), pp. 329-330.

[30] W. ARMSTRONG, "The Cry for Useless Knowledge", *The Nineteenth Century*, Vol. XXXIV, (November 1888).

[31] H.E. ROSCOE and A.H.D. ACLAND, "The Industrial Value of Technical Training: some opinions of practical men", *The Contemporary Review*, Vol. LV, (May 1889).

Despite businessmen's scepticism, economists endorced the panacea of general education for workmen. To quote Henry Fawcett, "increased dexterity; greater power of concentration; superior trustworthiness; quickness in discovering a new industrial process and in learning how to use a new machine, are some of the many industrial advantages which the labourer whose mind has been trained generally possesses over one who has grown up in ignorance".[32] Henry Sidgwick[33] urged supplementary education to improve the results of apprenticeships; support for his critique of long apprenticeships can be found in Adam Smith.[34] Similarly Jevons recommended a one to three year apprenticeship period.[35] George Howell, secretary of the Trades Union Congress, was also critical of the apprenticeship system. His standpoint was that employers used long apprenticeships as a means of getting cheap labour rather than as a means of effectively training skilled artisans; thus his aim was to improve the system rather than replace it.[36] Marshall[37] certainly advocated learning by doing under an improved apprenticeship scheme and the wide acceptance this idea attained can be seen in the setting up of a technical school by the Amalgamated Society of Carpenters and Joiners in 1868.[38]

Current opinion was reflected in the frame of reference for the 1889 Technical Instruction Act — technical instruction was to be in principles and expressly not the practice of any particular trade.[39] Formal teaching was felt to be a supplement to, not a substitute for, workshop experience, and given better basic education our apprentices were considered on a par with their continental equivalents.[40] Clearly there was no demand for the removal of apprenticeship; however, in 1862 Ruskin[41] had argued for government financed training schools to enhance the basic system. Unfortunately this implied high costs since it presupposed an adequate elementary education basis. Such a step may have been unnecessary due to the beginning of a decline in the demand for

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[32] H. FAWCETT, *Manual of Political Economy*, (London: 1883), p. 231.

[33] H. SIDGWICK, *The Principles of Political Economy*, (London, 1887).

[34] A. SMITH, *The Wealth of Nations*, (1776), BK.I, chap. X, part ii.

[35] W.S. JEVONS, *The State in Relation of Labour*, (London, 1882), pp. 82-3.

[36] G. HOWELL, "Trade Unions, Apprentices and Technical Education", *The Contemporary Review*, Vol. 30, (October 1877).

[37] A. MARSHALL, *Principles of Economics*, (1961 ed.), pp. 210-211.

[38] Information supplied by the General Secretary, The Amalgamated Society of Woodworkers: The scheme is set out in S. HIGENBOTTOM, *Our Society's History*, (Manchester, 1939), pp. 109-110.

See also *Report from the Select Committee on Scientific Instruction*, (1868), p. x.

[39] S.J. CURTIS, *History of Education in Great Britain*, (London, 1967), p. 500.

[40] F.C. MONTAGUE, *Technical Education*, (London, 1887), p. iv.

[41] J. RUSKIN, *Unto this Last: four essays on the first principles of Political Economy*, (London: 1907), pp. 15-16.

skilled labour. Foxwell [42] pointed out the paucity of data to verify this hypothesis but indirect evidence lends it some support. Skilled men had been replaced by boys, women and unskilled labourers as mechanisation simplified tasks in industry. J.A. Hobson concluded that " ...the proportion which this skilled work bears to the aggregate of labour in the machine industry is constantly diminishing ".[43] Marshall in 1890 [44] and William Smart [45] reached the same conclusion and by 1919 Marshall [46] felt the evidence was even clearer.

The discussion of the preceeding paragraphs was summarised in the Final Report of the Royal Commission on the Depression of Trade: the castigation of exporters' complacency and their ignorance of markets, the production of cheap but inferior goods and all the traditional faults were mentioned but it was emphasised that " In the matter of education we seem to be particularly deficient as compared with some of our foreign competitors; ... ".[47]

The Problem of Foreign Competition 1890-1919

All the agitation had little effect before 1900; indeed it could not until elementary, secondary and higher education developed on the lines required by industry. Marshall had warned businessmen to take a more professional approach to their work in the nineties;[48] by 1904 he felt that they had learned the lesson.[49] The reason for this awakening was the overwhelming evidence of Britain's competitive weakness illuminated by the Merchandise Marks Act of 1887 and a plethora of publications [50] highlighting foreign infiltration into domestic markets.

Inevitably there was criticism of the British education system on the now customary premise that " An excellent system of public education is one of

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[42] H.S. Foxwell, *Irregularity of Employment and Fluctuation of Prices*, (Edinburgh, 1886), p. 69.

[43] J.A. Hobson, *The Evolution of Modern Capitalism*, (London, 1894), p. 345.

[44] A. Marshall, *Principles*, (1961 ed.), p. 254.

[45] W. Smart, *The Distribution of Income*, (London, 1899), pp. 224, 239-240.

[46] A. Marshall, *Industry and Trade*, (Lonson, 1919), p. 168.

[47] *Reports of the Royal Commission appointed to enquire into the Depression of Trade and Industry*, H.M.S.O., 1887), paragraph 97.

[48] A. Marshall, *Memorandum on Fiscal Policy of International Trade*, (1903), House of Common No. 321, paragraph 66.

[49] A. Marshall, *Industry and Trade*, (London, 1919), p. 95.

[50] e.g., E.E. Williams, *Made in Germany*, (1896), F.A. McKenzie, *American Invaders*, (1902), T. Veblen, *Imperial Germany and the Industrial Revolution*, (1915), Swire Smith, *The Real German Rivalry*, (1916), H. Hauser, *Germany's Commercial Grip on the World*, (1917), See also, J.H. Schooling, " Occupation as a Test of Prosperity ", *The Fortnightly Review*, No. CCCC XLV, January 1st., 1904 and J.B.C. Kershaw, " The Future of British Trade ", *The Fortnightly Review*, No. CCCLXXI, November, 1st, 1897.

the best forms of national investment ".[51] The Royal Commission of 1895 found education " confessedly defective in the part which lies between the elementary schools on the one hand and the universities on the other ".[52] In addition to poor conditions in the schools it was reported that local authorities had not used their rating powers under the 1889 Act to finance technical institutions.[53]

H. de B. Gibbins was critical of the emphasis on scientific training.[54] He saw the need for co-ordinated efforts embracing commercial as well as technical arts since production without efficient distribution was futile. The remedy, in his eyes, was the formation of a Department of Commerce to give grants, set examinations and control standards.[55]

In the circumstances we must explain why Marshall chose 1904 as the year when the scales fell from businessmen's eyes. It was the period when tariff reform was a political issue and technical education took on the role of an alternative to the abandonment of free trade.[56] However, Ashley believed, as did many manufacturers, that at bottom industrial success depended on confidence in your market; [57] expansion of training was a puny weapon to range against prohibitive tariffs. For such reasons, by 1909 the *Textile Manufacturer* could state that " In this country at least, technical education is at a discount ".[58] Ashley's broad argument was that a shift in the demand for labour had removed the premium on skill and expanded the requirement for lower grades of worker who were being taken up by the export industries.[59]

William Smart [60] had expounded the same ideas slightly earlier. He expected the replacement of many skilled men by semi-skilled operatives; [61] he anticipated the expansion of employment in the services sector since capital substitution was impossible; [62] the future employer, he felt, would need a less specialised knowledge [63] — one of men and things rather than techniques.

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[51] T.J. MacNamara, " Joints in our Educational Armour ", *The Fortnightly Review*, No. CLXC, June, 1899, p. 718.

[52] *Royal Commission on Secondary Education. Report of the Commissioners*, (H. M.S.O., 1895), Vol. I, p. 2.

[53] *Ibid.*, p. 12.

[54] H. de B. Gibbins, " Made in Germany, and how to stop it ", *The Fortnightly Review*, No. CCCXC, June, 1899, pp. 1005-6.

[55] *Ibid.*, pp. 1010-11.

[56] W.J. Ashley, *The Tariff Problem*, (London, 1903), p. 160.

[57] *Ibid.*, p. 161.

[58] D.H. Aldcroft (ed.), *The Development of British Industry and Foreign Competition* 1885-1914, (London, 1968), pp. 147-8.

[59] W.J. Ashley, *op. cit.*, p. 79.

[60] W. Smart, *The Distribution of Income*, (London, 1899), pp. 242-5.

[61] *Ibid.*, pp. 130-1.

[62] *Ibid.*, p. 245.

[63] *Ibid.*, p. 179.

Interestingly, the lack of a general background was a point of criticism levelled at British managers in the 1930's.[64]

Smart's views were, in part, endorsed by Shadwell's study which compared Britain, Germany and the United States.[65] The burden of his argument was that German technical schools supplied industry from above, whilst in England working class boys were educated to enter management from below.[66] The result was that Britain had a chronic lack of highly trained upper ranks — the weakness which had been mentioned by the Select Committee of 1868, the Royal Commission of 1884, and virtually all other commentators. Shadwell noted the expansion of the universities in general, and science departments in particular, and commented on the lack of scholars rather than the lack of schools. The reason, he suggested, was that in Britain a career in industry had not the same status as in Germany. Thus he concluded that our ' rank and file ' were a match for anybody's — but our ' officer corps ' was not.[67]

Others writers echoed these sentiments and it was clear that the arguments for more education were spreading to the universities as the primary and secondary system became less inadequate during the early twentieth century.

The First World War brought home the weakness of our science-based industry [68] with the result that the Department of Scientific and Industrial Research was set up in 1916. The Department's first publication [69] ran through the usual themes: more training for all grades of employment, Britain's strength in pure research wasted by lack of application in industry (here the obligatory comparisons were drawn between our performance and the success of the United States and Germany), British managers were complacent due to nineteenth century ascendancy and therefore considered research to be an expensive luxury, and so on. Manufacturers, in short, did not accept the assertion that " investment involved in providing wide facilities for industrial research will be remunerative ".[70] One consequence was that while American researchers were at a premium, British chemists and physicists were scarce and underpaid.[71]

British businessmen's indifference can probably be attributed to their continued pre-eminence in the international markets up until the Great War. In

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[64] A. Siegfried, *England's Crisis*, (London, 1931), p. 67.

[65] A. Shadwell, *Industrial Efficiency*, (London, 1906).

[66] *Ibid.*, pp. 632-3.

[67] *Ibid.*, pp. 630-1.

[68] *Committee on Industry and Trade: Factors in Industrial and Commercial Efficiency, being Part I of a Survey of Industries*, (H.M.S.O.: 1927), p. 306.

[69] A.P.M. Fleming, *Industrial Research in the United States of America*, (H.M.S.O., 1917).

[70] *Ibid.*, p. 56.

[71] Teachers' Guild of Great Britain and Ireland, *Education Reform: being the Report of the Education Reform Council*, (London: 1917), pp. 44-5.

the traditional sectors (iron and steel, coal, cotton and woollens) our exports dominated the world's trade; [72,73] on the debit side, Britain's exports were heavily concentrated in these sectors, but by 1914 this factor had not had catastrophic effects upon the country's share of total world exports.

Exports in the Depression 1920-1939

The 'twenties rekindled the debate concerning training and economic performance. The Balfour Committee agreed that " the problem of creating and maintaining skill is one of the crucial problems of industry ".[74] The low apprenticeship intake was attributed to the depressed economy and the division of labour which caused a " consequent decline in the proportion borne by all-round skilled craftsmen to semi-skilled or unskilled workers ".[75] The Balfour Report did not study the manual skill problem in any detail because a year later, in 1928, the Ministry of Labour published a report on apprenticeships and training for skill.[76] The Ministry found that more flexible learnerships over a five year period were replacing the rigid seven year apprenticeship but in general the system remained basically unchanged. Although the Report doubted the capacity of present arrangements for meeting the prospective demands of industry " the employers' associations... expressed themselves as satisfied that the present system is capable of producing skilled workers in adequate numbers ".[77] Evidence was, however, supplied which implied an insufficient apprentices-to-journeymen ratio in the building, printing, engineering and shipbuilding sectors.[78] Many reasons were cited to explain this phenomenon: reduced demand for craftsmen due to mechanisation, incentive schemes which discouraged journeymen from taking the time to train youths, well-paid unskilled jobs caused by the war, and so forth. From the boys' viewpoint, being indentured on low pay seemed a dismal prospect in the midst of a trade depression; [79] on the firms' side it was found that the larger enterprises were not prepared to bear the costs of training and went in for pirating skilled lab-

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[72] G.D.H. Cole, *British Trade and Industry Past and Future*, (London, 1932), pp. 106-8.

[73] League of Nations, *The Problem of the Coal Industry*, (Geneva, 1929), pp. 26-7.

[74] *Committee on Industry and Trade: Factors in Industrial and Commercial Efficiency*, (H.M.S.O.: 1927), p. 18.

[75] *Ibid.*, p. 22.

[76] Ministry of Labour, *Report of an Enquiry into Apprenticeship and Training for the Skilled Occupations in Great Britain and Northern Ireland 1925-26*, Volume VII General Report, (H.M.S.O., 1928).

[77] *Ibid.*, p. 4.

[78] *Ibid.*, p. 165.

[79] *Ibid.*, pp. 64-72.

our as it was required.[80] As for the combining of technical education with workshop training, only about 12,000 boys were in day-continuation courses and 11,000 in full-time technical schools;[81] day release was granted by only 10% of textile employers, the most generous industry.[82] To summarise a lengthy work: so far as manual workers were concerned, training was in decline.

The Balfour Committee reinforced previous authors on the question of scientific manpower. Although they noted some industrial recognition of the problem, they had to report an odd trait: " the apathy and indifference towards science which is still far too common in British industry ".[83] And where scientific work did occur it was towards the refining of old ideas rather than the discovery of new ones.[84]

Another traditional topic given an airing was the need for the commercial training of management. Specific education in business was fairly new — the first commerce faculty was set up at Birmingham University in 1901. Unfortunately, what efforts there were to meet the requirements of commerce met with the usual prejudice against university education and the university educated.[85] Of course comparisons with Germany and the United States showed Britain in an unfavourable light: " business training... is now quite certainly the largest of the waves passing over American Universities ".[86]

The Balfour Committee touched on one new area — the development of formal education at a post-elementary level. In Germany, America and France there was more encouragement — where not actual compulsion — to undertake continuation studies after leaving school.[87'88] The British experience was that roughly a quarter of school-leavers went to evening classes for a year, and that where local authorities used their power under the 1918 Act to enforce day-continuation tuition they met the opposition of employers who refused to take on youngsters from such areas.[89]

The same theme was examined by the Hadow Committee.[90] As usual it was assumed that " There is no capital more productive than the energies

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[80] *Ibid.*, pp. 25-6.
[81] *Ibid.*, p. 106.
[82] *Ibid.*, p. 108.
[83] *Committee on Industry and Trade: Factors in Industrial and Commercial Efficiency, being Part I of a Survey of Industries*, (H.M.S.O., 1927), pp. 38-9.
[84] *Ibid.*, p. 37.
[85] *Ibid.*, pp. 242-4.
[86] *Ibid.*, p. 261.
[87] *Ibid.*, p. 257.
[88] *Ibid.*, p. 259.
[89] S.J. CURTIS, *op. cit.*, p. 347.
[90] Board of Education, *Report of the Consultative Committee on the Education of the Adolescent*, (H.M.S.O., 1927).

of human beings "[91] but there was explicit recognition that education should take account of the future employment prospects of those being educated.[92] The Committee recommended the raising of the school-leaving age to 15 years and despite the opposition of employers to vocational training in schools[93] it was suggested that a practical bias should be introduced into post-primary education.[94]

The views of employers were supported by the Malcom Committee;[95] this body considered that the *status quo* adequately met industry's requirements which were "good intelligence and adaptability, not specialised vocational training".[96] Although the Trades Union Congress desired a raising of the school-leaving age, the feeling of the National Confederation of Employers' Organisations was strongly against it,[97] as it was also against compulsory Day Continuation Schools.[98] Thus the Committee found the extant system quite satisfactory from the standpoint of industry.

The Liberal Party surveyed the training-economic performance debate in 1928.[99] Many distinguished economists contributed, among them J.M. Keynes, D.H. Robertson, W.T. Layton and Sir Josiah Stamp. Given the ubiquitous assumption that human resources are "The most vital factor in our industrial efficiency",[100] the Report felt justified in attacking British management. Industry's anti-university prejudice was noted and as an answer to the unfavourable international comparisons it was suggested that an Institute of Management should be set up by the state.[101] The case for supplementary education for apprentices was reiterated,[102] despite recognition of the fact that "many employers resist any proposal which would decrease the supply of the cheapest labour".[103] One novel point was the emphasis laid on Britain's paucity of marketing skills,[104] an aspect given detailed consideration by the Goodenough Committee of 1931.[105]

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[91] *Ibid.*, p. 45.
[92] *Ibid.*, p. 42.
[93] *Ibid.*, p. 120.
[94] *Ibid.*, p. 114.
[95] *Report of the Committee on Education and Industry* (England and Wales). Second Part (H.M.S.O., 1928).
[96] *Ibid.*, pp. 15, 59.
[97] *Ibid.*, pp. 24-5.
[98] *Ibid.*, p. 28.
[99] *Britain's Future: being the Report of the Liberal Industrial Inquiry*, (London, 1928).
[100] *Ibid.*, p. 126.
[101] *Ibid.*, pp. 130-32.
[102] *Ibid.*, p. 385.
[103] *Ibid.*, pp. 393-4.
[104] *Ibid.*, pp. 133-4.
[105] *Final Report of the Committee on Education for Salesmanship*, (H.M.S.O., 1931), p. viii.

This Committee made points which are already familiar: on the demand side employers must be persuaded to realise the utility to be derived from hiring and training the better educated; [106] on the supply side our education system must eradicate the failure to encourage the able to undertake higher education (unless their parents possessed private means).[107] However, the Committee also stressed the need for more and better salesmen,[108] adequate market research,[109] linguistic skills [110] and other marketing-oriented pre-requisities. Britain's annual output of commerce graduates, less than 250, was negligible in comparison with the German or American figures. As these few often found it difficult to obtain employment it was clearly inadequate demand which produced such a meagre total. This conclusion had been drawn five years earlier in a work by W.J. Ashley [111] who stated that "The whole system of British commercial education... is at present second rate... ".[112]

This second period of heart-searching is very similar to that of the previous century with exactly the same questions and much the same answers. Although employers came in for more criticism, the basis of that criticism — suspicion of the educated, apprentices used as cheap labour, opposition to further compulsory education, and so on — remained unchanged. Even new critics such as the industrial consultants [113] came up with the old arguments that Britain spent too little on research [114] and that the fruits of these meagre efforts were ignored due to organisational incompetence.[115] Again the point was made that management education was inadequate,[116] especially since university courses were purely theoretical and irrelevant.[117]

One innovation was the suggestion that lack of training caused unemployment.[118] The Minority Report of the Poor Law Commission had taken a similar view in 1909.[119] Essentially this was a case for re-training, since men displaced from permanent work had "no skill that meets a general demand,

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[106] *Ibid.*, p. 11.
[107] *Ibid.*, pp. 35-6.
[108] *Ibid.*, p. 8.
[109] *Ibid.*, p. 18.
[110] *Ibid.*, p. 16.
[111] W.J. ASHLEY, *Commercial Education*, (London, 1926).
[112] *Ibid.*, p. 56.
[113] L. URWICK, *The Meaning of Rationalisation*, (London, 1929).
[114] *Ibid.*, p. 80.
[115] *Ibid.*, P. 81.
[116] *Ibid.*, p. 146.
[117] *Ibid.*, p. 147.
[118] H.A. SILVERMAN, *The Economics of Social Problems*, (London, 1928), pp. 207-281.
[119] *Report of the Royal Commission on the Poor Laws and the Relief of Distress*, (H.M.S.O., 1909), p. 1167.

and often none that bears any distinctive name ".[120] Therefore it was recommended that able-bodied unemployed should be maintained only on condition that, after suitable tests " to discover in what way they could be improved by training ", they would undergo training at public expense.[121]

Pigou [122] endorsed these views — perhaps because William Beveridge opposed them. Beveridge pointed out that skilled workers formed a majority of the unemployed [123] and — if we use Keynesian hindsight — although retraining could alleviate relative demand failures, it could not reverse a chronic lack in effective demand as a whole.[124]

Demographic changes after 1933 raised the new problem of juvenile unemployment as industry seemed incapable of absorbing the surfeit of 14-18 year olds. John Jewkes, for example, discussed the importance of training and raising the school-leaving age as a means of alleviating this problem.[125] R.H. Tawney devoted a study to analysing the effect of a higher school-leaving age on unemployment a year hence.[126] Support for a higher school-leaving age — even to 16 years — came from a Parliamentary group,[127] and in 1935 the Unemployment Act made possible the compulsory education of unemployed juveniles. However, the effects were small [128] and when war broke out the higher leaving age agreed in 1936 had not yet materialised.

An Assessment

The 'twenties discussion was unique in that for the first time it was officially admitted that the belief in education and training as methods of improving economic performance was not based on evidence. On the contrary it was an act of faith. The Goodenough Committee confessed: " Many of our countrymen are still fundamentally sceptical as to the practical value of education ".[129]

To establish the effectiveness of training at least one of the following criteria should have been satisfied: the rate of return on human beings found to

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[120] *Ibid.*, p. 1134.

[121] *Ibid.*, p. 1237.

[122] A.C. PIGOU, *Unemployment*, (London, 1913), pp. 67-75.

[123] W.H. BEVERIDGE, *Unemployment - a Problem of Industry*, (London, 1917), p. 127.

[124] *Ibid.*, p. 131.

[125] J. JEWKES and A. WINTERBOTTOM, *Juvenile Unemployment*, (London: 1933), chap. IV.

[126] R.H. TAWNEY, *The School Leaving Age and Juvenile Unemployment*, (London, 1934).

[127] *Planning for employment: a preliminary study by some members of Parliament*, (London: 1935), p. 93-94.

[128] A.E. MORGAN, *The Needs of Youth*, (Oxford, 1939), pp. 94-102.

[129] *Final Report of the Committee of Education for Salesmanship* (H.M.S.O., 1931), p. 7.

be at least as large as the rate on other types of investment; or the existence of shortages in the labour market which training and education could eradicate. Unfortunately for the protagonists, the theoretical bases for these arguments were not developed until the turn of the century and their practical application was impossible during the period under discussion due to lack of data.

The human capital concept can be traced through the works of Sir William Petty, Smith, Marx, von Thunen, Giffen and others. However, the idea of capitalizing a future earnings stream was not set out until 1891 [130] and the internal rate of return framework had to wait until 1906 when Irving Fisher related current costs to the future flow of receipts.[131] Application of these tools was non-existent in the Western World before 1935, though the Russian Strumilin had performed an isolated study ten years earlier.[132] Undoubtedly the paucity of data and imputation difficulties were the prime causes of this delay. But whatever the causes, the consequence was that the arguments were based on assertions like "We all know that the return on personal investment of this kind... often exceeds the return on any kind of material investment".[133]

The manpower budgeting approach was, at the time, equally impracticable. Again, both the theoretical framework and tractable data were absent; for example, Dearle's study of industrial training in 1914,[134] though it discussed the supply and demand for labour in general terms, never related them in any quantitative sense. In 1926 the Ministry of Labour [135] did attempt to utilise quantitative methods to assess the apprentices required, given assumptions about the future demand for craftsmen. Although the theoretical relationship [136] had been deduced, the data were not available for its application and so guesses were employed, which did suggest that current training programmes were inadequate.[137] A more important revelation was that estimation was difficult

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[130] J.S. NICHOLSON, "The Living Capital of the United Kingdom", *Economic Journal*, Vol. I, (1891), pp. 94-107.

[131] I. FISHER, *The Nature of Capital and Income*, (1906), *passim*.

[132] G.S. STRUMILIN, "The Economic Significance of National Education", in E.A.G. ROBINSON and J.E. VAIZEY (eds.), *The Economics of Education*, (London, 1966), pp. 276-323.

[133] L. ROBBINS, *Wages*, (London, 1925), p. 35.

[134] N. DEARLE, *Industrial Training*, (London, 1917).

[135] Ministry of Labour, *Report of an Enquiry into Apprenticeship and Training for the Skilled Occupations in Great Britain and Northern Ireland*, 1925-6, Vol. VII, General Report, (H.M.S.O., 1928).

[136] i.e. Required Journeyman/apprentice ratio equals: $\frac{r\,(100 \pm n)}{100 \pm n\,l\,r}$

where 'r' is the journeyman/apprentice ratio that preserves the stock, 'l' is the average length of apprenticeship and 'n' the percentage growth or decline in the demand for journeymen.

[137] Ministry of Labour, *op. cit.*, p. 165.

and, further, that it was dangerous to make policy recommendations on such a flimsy base. Certainly the Ministry's conclusion was conditional on the assumption of a static demand for craftsmen although throughout the period under discussion there was probably an excess supply of labour in the skilled trades.[138] This assertion receives some support from the Balfour Committee's findings on emigration which showed net losses per annum of the order of 20,000-30,000 skilled men.[139'140] We may also note in this context the narrowing of differentials between skilled and unskilled labour in the post-war period.[141] Thus as Bray had remarked in 1909 " we do not, for example, know whether the demand for skilled labour is increasing or decreasing... " [142] Of course such an admission did not prevent Bray from lamenting the decline of apprenticeship or congratulating those employers enlightened enough to realise that the provision for future supply was inadequate.[143]

Over the whole period economists were indisputably unanimous in advocating additional education as the means of improving the country's competitive position. It is also irrefutable that the tools of analysis required to justify this viewpoint were at first nonexistent, and later left as abstract ideas with no suitable data to give them practical life. This situation did not deter them from their advocacy: why was this? Classical economists based their case for extensions to the education system on social, rather than purely economic, grounds.[144,145,146] Although this theme continues in the neo-classics it does not affect our present discussion: to justify the economists' attitude we must look at their theoretical apparatus.

Marginalist theory concludes that workers are paid their marginal revenue product. Any technological change for the better will shift the productivity schedules outwards and make the workers worth more and a shift of labour from a low productivity sector to a high productivity sector would increase the aggregate product. Education could either be seen as an improvement in human resources as a whole or as a means to facilitating switches between

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[138] W.H. BEVERIDGE, *op. cit.*, pp. 69-70, 208-9.

[139] *Committee on Industry and Trade: Further Factors in Industrial Efficiency, Being Part II of a Survey of Industries*, (H.M.S.O., 1928), p. 29.

[140] *Ibid.*, p. 240.

[141] *Committee on Industry and Trade: Survey of Industrial Relations*, (H.M.S.O., 1926), p. 15.

[142] R.H. BRAY, " The Apprenticeship Question ", *Economic Journal*, Vol. XIX, (1909), p. 415.

[143] *Ibid.*, pp. 404-5.

[144] G.F. KNELLER, *Education and Economic Thought*, (London, 1968), pp. 24-34.

[145] L. ROBBINS, *The Theory of Economic Policy in English Classical Political Economy*, (London, 1952), pp. 89-93.

[146] E.G. WEST, *Education and the State*, (London, 1965), chap. 8, *passim*.

sectors thus increasing output per head on both counts. Clearly marginalist theory would encourage support for education and training.

However education is and was not costless. Education may well help the system move to its theoretical static competitive equilibrium but its efficiency as a catalyst would have to be compared with other social lubricants such as employment exchanges or some other information system. Again, education may well increase productivity but that on its own is not enough since the investment in human capital must be compared with non-human investment before the country's priorities can be established on economic grounds. Therefore the neo-classical model, *per se*, offered no answer to the question of more or less education expenditure. Henderson admitted as much: " the most desirable number of doctors, barristers, teachers etc. is not a thing which can be settled on purely economic grounds, ... ".[147]

Those economists who, at the turn of the century, had begun to specialise in labour problems unfortunately confined themselves to the " practical reform of legal institutions and administrative practice ".[148] Therefore it was still *a priori* arguments which endorsed the cry for more education and training. Tawney's case was simply that the amount spent on education was tiny compared with that disbursed on other (less meritorious) activities.[149] Pigou maintained that the " most important investment of all is investment in the health, intelligence and character of the people," [150] but with no economic justification; nor did he suggest how the scarce funds invested were to be allocated between his three goals.

Pigou did admit that where value-judgements were concerned " a wide experience of men and of affairs " was needed.[151] However, the employers (men of this type), were largely antipathetic towards training and even within Parliament there was hostility. For example, the Report of the Select Committee on National Expenditure (1920) [152] included comments such as: " with certain exceptions there is no demand for increased accommodation in Technical Schools," and expenditure reflected " enthusiasm for the promotion of Education with too little regard to the cost entailed." [153] On the same lines the Geddes Committee reported that " The recent great increase in the cost of State subsidised education is alarming." [154] The May Committee of 1931 went so far as to accuse education expenditure of actually restricting industry and

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[147] H.D. HENDERSON, *Supply and Demand*, (London, 1938), pp. 151-2.

[148] J.A. SCHUMPETER, *History of Economy Analysis*, (London: 1963), p. 947.

[149] R.H. TAWNEY, *Secondary Education for All*, (London, 1922), p. 138.

[150] A.C. PIGOU, *Socialism versus Capitalism*, (London, 1937), p. 138.

[151] *Ibid.*, p. 137.

[152] *Report with appendices from the Select Committee on National Expenditure*, (H.M. S.O., 1920).

[153] *Ibid.*, p. ix.

[154] *Committee on National Expenditure: First Interim Report*, (H.M.S.O., 1922), p. 114.

employment; [155] it also realised that " a tendency has developed to regard expenditure on education as good in itself... ".[156]

Clearly the " men of affairs " did not concur with the economists. But of course they are open to the same criticism: namely of voicing unbacked opinion and prejudice. In theory, the limit of government activity lay at the margin where the cost of raising extra revenue equalled the benefit gained from spending it; but of course it is not the optimal size of the government sector which is at issue here, rather the ideal distribution within that optimum amount. Even Keynesian macroeconomics — though it advocated public expenditure in a slump — did not provide a theoretical base for more expenditure on education (as against anything else).

Laissez-faire economics would suggest that the market mechanism should be relied upon to provide an optimal competitive equilibrium for the system. However as the ' optimality ' depends on the extant income distribution the ' optimal solution ' may be politically unacceptable. A more important block to applying the laissez-faire model is the fact that the costs borne and benefits received involve different individuals. Parents who pay for their children's education cannot force reimbursement; firms who train workers may lose once they are skilled craftsmen [157] unless the techniques taught are extremely specialised and therefore worthless to any other firm. In the words of Marshall: " the technical training of the workshop depends in a great measure on the unselfishness of the employer." [158] The essence of the problem is the lack of a market for the capital embodied in the workforce: without this type of market the price mechanism is ineffective.

General education which leads to a universal increase in productivity is really an external economy to each firm. However, the amount that can be spent in this direction is limited, depending upon the " economic chivalry " of the taxpayer.[159] Marshall felt that the rate of return at the margin was greater for expenditure on educating the less well educated than for expenditure directed towards middle and upper class children.[160] But apart from this broad hint he gave little guidance to the policymaker. Pigou laid down the fundamental welfare arguments: that the rate of return on educating the poor should be not less than the opportunity cost (rate of interest);[161] that " capital would be invested in nurture, education and training of different persons — in such wise that, ..., the values of the marginal net product yielded by it would be

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[155] *Report of the Committee on National Expenditure*, (H.M.S.O., 1931), p. 11.
[156] *Ibid.*, p. 192.
[157] W. SMART, *The Distribution of Income*, (London, 1899), p. 296.
[158] A. MARSHALL, *Principles*, (1961 ed.), p. 565.
[159] *Ibid.*, p. 719.
[160] A. MARSHALL, *Principles*, (1961 ed.), Vol. II, pp. 311-12.
[161] A.C. PIGOU, *The Economics of Welfare*, (1952 ed.), pp. 744-5.

equal everywhere ".[162] This was all very well in the abstract, perfect world of theory, but in the real world a whole spectrum of imperfections made the practical value of such doctrines negligible. Bastable recognised the difficulties involved in applying extant theories but could still make out a *prima facie* case for state aid to technical instruction because of " the evident economic advantage " and since it was " productive even in a financial point of view." [163]

The economists, as we have repeatedly seen, were in favour of more education and training. We are faced with the question: why did the experts' opinion have so little impact upon businessmen?

The first reason was that the economists' case was couched in theoretical terms. This would probably alienate the businessman and drive him to the comfort of his own experience. Due to a many-sided attack towards the end of the nineteenth century, attempts had been made by the economists to ' professionalise ' their subject so that it was less accessible to the layman (and his criticisms).[164] Neither the damaged prestige of the attacked economists, nor the attempt to restore the status of economics by a retreat into the unintelligible realms of high theory, were calculated to impress businessmen.

The second reason was the economists' rejection of the laissez-faire principle. In 1870 J.E. Cairnes [165] had delivered the first blow but others joined in the fight and advocated " extensions of Government action of a kind quite unsanctioned by the laissez-faire principle." [166] If businessmen believed strongly in laissez-faire then it is possible that economists holding an interventionist ideology may have had their policy statements ignored by the captains of industry. J.M. Keynes [167] clearly believed this to be the case and H. Levy wrote: " The idea that free competition is the ' natural ' condition of economic life, that it secures the advantage of all, is still extremely common and extremely powerful among them ".[168]

The fact that education would have increased shortrun costs is a third reason for the industrialists to have been unmoved by the economists' arguments. The economists' sacred cow of free-trade would have had to have been sacri-

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[162] *Ibid.*, p. 746.

[163] C.F. Bastable, *Public Finance*, 3rd edition 1917), p. 96.

[164] E. Cannan, *The Economic Outlook*, (London, 1904), p. 174; " The Need for Simpler Economics ", *Economic Journal*, Vol. XLII, No. 167, September 1932, passim; " More Elementary Economics Wanted " in *An Economist's Protest* (London, 1927), p. 404. See also Shield Nicholson, " The Vagaries of Recent Political Economy ", *The Quarterly Review*, Vol. 219, (1913), *passim*.

[165] J.M. Keynes, *The End of Laissez-Faire*, (London, 1926), p. 26.

[166] W.S. Jevons, " The Future of Political Economy ", *The Fortnightly Review*, November 1876. Reprinted in W.S. Jevons, *The Principles of Economics*, (London, 1905), p. 205.

[167] J.M. Keynes, *op. cit.*, p. 36.

[168] H. Levy, *Monopolies, Cartels and Trusts in British Industry*, (London, 1927), p. 174.

ficed before businessmen would suffer cost-increasing policies, but 1903 saw fourteen leaders of current economic thought stand up and be counted by writing a letter to the *Times* championing free trade; [169] even as late as 1932 a committee of economists wrote that it would be "a disaster if the policy of Free Trade... were today to be sacrificed to ignorance or panic or jealousy or specious calculations of a moment's gain".[170] The free-trade controversy thus provided further grounds for scepticism concerning the experts' views on the part of practical men. Indeed the subsequent correspondence in the *Times* indicated that there was widely felt concern about men of science using their position for political ends. This may have had the effect of besmirching the reputation of both the men concerned and the discipline they spoke for, yet another good reason for their advice (on all matters) to be discarded.

The explanations suggested for the lack of rapport between economists and businessmen, though tentative for the earlier period, have much evidence to support them by the thirties. Although the Government set up an Economic Advisory Council in 1930 the prestige of economic orthodoxy had probably never been lower among laymen. The reasons for this situation were discussed by Hutt [171] and Barbara Wootton [172] - the former defending his subject, the latter defending its attackers, Both agreed upon the basic causes of the disreputable status of economics, namely that it had no practical use; [173,174] that it was unintelligible to practical men; [175,176] that disagreement among economists undermined their influence; [177,178] that they had lost touch with reality; [179,180] and that they had ceased to be disinterested observers [181,182] Mrs. Wootton rebuked the users of the competitive equilibrium model as an argument for capitalism and against socialist alternatives,[183] while Hutt considered the ignorance of the laymen and their subservience to vested interests as the reasons for their support for privilege against competition. Notwithstanding

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169 *Times*, 15 August, 1903.
170 W.H. BEVERIDGE *et al.*, *Tariffs: the Case Examined*, (London, 1932), p. vii.
171 W.H. HUTT, *Economists and the Public*, (London, 1936).
172 B. WOOTTON, *Lament for Economics*, (London, 1938).
173 B. WOOTTON, *op. cit.*, p. 15.
174 W.H. HUTT, *op. cit.*, p. 36.
175 B. WOOTTON, *op. cit.*, p. 19.
176 W.H. HUTT, *op. cit.*, p. 207.
177 B. WOOTTON, *op. cit.*, p. 22.
178 W.H. HUTT, *op. cit.*, p. 217.
179 B. WOOTTON, *op. cit.*, p. 31.
180 W.H. HUTT, *op. cit.*, p. 208.
181 B. WOOTTON, *op. cit.*, p. 33.
182 W.H. HUTT, *op. cit.*, p. 227.
183 L.M. FRASER, "Economists and their Critics", *Economic Journal*, Vol. XLV III, No. 190, (June, 1938), pp. 204-5.

their opposing views in the debate, they both agreed that " the greatest scepticism prevails as to the whole relationship between current economic theory and the solution of practical economic problems " [184] and that " the orthodox economist is deeply conscious of his impotence to influence opinion." [185]

In conclusion we may note that neither side of the education and training argument was supported by any real evidence. The international comparisons, even disregarding the danger of a *post hoc* fallacy, would have endorsed a wide range of alternative policies. The rest of the propositions were founded on the sand of intuition, opinion, prejudice, call it what you will. Of course statistical material was scanty but more could have been done to remedy the deficiency, especially towards the end of the period when the Census information of 1911, 1921 and 1931 could have been utilised. In extenuation, we may point out that the research carried out in the sixties [186] has not provided a refutation, or an acceptable level of verification, of the link between training and economic performance. Decisive evidence has still to be produced.

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[184] B. WOOTTON, *op. cit.*, p. 29.

[185] W.H. HUTT, *op. cit.*, p. 34.

[186] M. BLAUG, *Economics of Education*, (London, 1967).