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DEPARTMENT OF EDUCATION AND SCIENCE

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FROM THE SECRETARY OF STATE

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The Rt Hon Tom King MP
Secretary of State for Employment
Caxton House
Tothill Street SW1H 9NF

23 January 1985

Dear Tom,

HOUSE OF LORDS SELECT COMMITTEE ON SCIENCE AND TECHNOLOGY: SUB-COMMITTEE ON EDUCATION AND TRAINING FOR NEW TECHNOLOGIES

The Department has been sent an advance copy of the report Lord Gregson's Sub-Committee is to publish at the end of January. I gather that copies have also been sent to some other Government Departments but am attaching the section of "Conclusions and Recommendations" in case you should not have seen them before.

The report is substantial and the recommendations are extensive and wide ranging. Consideration of the Government's reply, for which a White Paper would seem likely to be appropriate, will clearly involve discussion involving a number of departments and the MSC. Since the lion's share of the recommendations would appear to fall to the DES, however, I imagine you would agree that this Department should take the lead in co-ordinating the Government's response. On that assumption, I would plan to write to Lord Gregson immediately the report is published acknowledging the scale of his Sub-Committee's activities and indicating that careful discussion inter-departmentally would be required before a response were drawn up. That process would naturally take a little time but I should have thought we could realistically expect to let the Sub-Committee have a reply before the Summer Recess.

Unless you (or others to whom this is copied) have reservations about proceeding in this way, I shall ask my officials to set the necessary arrangements in hand. In particular early attention will need to be given to the central proposal for the establishment of an "Education and Training Board" which would clearly raise issues for a number of departments and, with the CBI about to establish an IT Skills Agency, comes at a sensitive time.

To enable me to respond to Lord Gregson as soon as the report is published, I would be grateful to receive your response by Wednesday 30 January. Unless I have heard from others by that date, I shall assume they are content.

I am sending copies of this letter to the Prime Minister, Norman Tebbit, Michael Heseltine, Peter Rees, David Young, Sir Robert Armstrong and Sir Robin Nicholson.

Yours,

Kenneth

H'L Rep

CHAPTER 9. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Education and the needs of industry

9.1 Technological progress in the UK is being hampered by failure to develop its human resources. The UK's competitive edge in international trade is at stake. There is no more serious challenge than the adequate provision of people properly qualified and trained to exploit new technologies as they emerge. (5.1-2)

9.2 New technologies make great demands on the intellectual resources of the nation. Hitherto the response of the education and training system has been insufficient. Attention must be given to longer-term needs, to redress the lack of correlation between educational provision and industrial requirements. (5.3-6)

9.3 The development and application of new technologies depend on leading edge technologists. The emphasis of UK policy should be on the encouragement of scientists and technologists of high quality; on underpinning such excellence by raising the technological literacy of the nation; and on continuous learning and updating. (5.7-5.11)

9.4 Initial education should provide boys and girls equally with a broad grounding of relevant knowledge and an understanding of the scientific principles underlying new technologies, coupled with a receptive attitude towards technological progress and its demands. (5.12)

9.5 Specialisation should be deferred as late as possible, to the end of formal education and to the early years of employment. (5.13)

9.6 Industry should accept more responsibility for the education and training of its recruits. (5.16)

9.7 For technologists first degrees are too short. The necessary specialisation should take place mainly at postgraduate and post-experience levels. HEIs should move towards this pattern in appropriate subjects. (6.2-3)

9.8 Educational provision should be more closely related to employment needs. Educational institutions should be given more guidance on the skills likely to be required by industry. (6.4-9)

9.9 A national body should be vested with the functions of analysing and forecasting the UK's needs for skilled people over the short and long term and of ensuring that those needs are met. (6.10)

9.10 The Committee therefore propose the establishment of an Education and Training Board:

(i) it should be a central Board, drawn from industry, the academic world, and government. The DES, DTI and MSC should nominate members to the Board either jointly or separately. (6.11, 6.17, 7.37)

(ii) the creation of an entirely new body is undesirable. The Board should be part of SERC with the independent power to report to Parliament. (6.13-15)

(iii) it should commission research on manpower needs on a continuing basis and have power to call for reports from Government Departments. (6.18)

(iv) it should be responsible for funding postgraduate taught courses within the dual support system. (6.25, 6.28)

(v) it should advise on priorities in undergraduate courses, conversion and post-experience courses, and training and retraining for technicians and craftsmen (6.26, 8.4, 8.6, 8.11, 7.36-7).

Funding

9.11 Education for new technologies is particularly dependent on a healthy research base in HEIs. The erosion of government funding for technological research should cease. University research should be strengthened, and new opportunities for research in polytechnics created. (6.20)

9.12 Selective grants should be introduced to encourage young PhDs to remain in scientific and engineering research at university. At least 50 per cent of the awards should be in areas identified as of priority by the Education and Training Board. All such awards should include a substantial element of industrial funding. (6.21)

9.13 There should be a more selective approach to funding higher education, coupled with priority for schemes particularly at postgraduate and post experience levels which involve funding through or by industry. (6.22 and 6.28)

9.14 The Education and Training Board should fund postgraduate taught courses within the dual support system by the following methods:

(i) a fund should be set up and administered by the Board, which should dispense grants on the basis of tenders from HEIs and in accordance with its identification of long-term priorities. (6.25)

(ii) a fund should be set up to support courses which have industrial sponsors. (6.30)

9.15 UGC and NAB should be more selective in funding undergraduate courses taking into account the long term priorities of the Education and Training Board. This should be brought about through some earmarking of funds. (6.26)

9.16 There should be a shift in higher education places from the arts to the sciences and engineering greater than that now proposed by the Government. Because of the higher cost of science places, extra resources from the Government will be required. (6.27)

9.17 A system of tax credits should be established to encourage industrial investment in educational and research institutions. (6.29)

9.18 In providing services to industry, whether of teaching, research or consultancy, HEIs should aim to ally with, and to develop their excellence in, particular sectors of industry. (6.31)

9.19 The equipment needs of HEIs should be assisted by encouraging the donation of equipment from industry, particularly through tax credits, and through collaboration between HEIs. (6.32)

9.20 HEIs should establish centres for multidisciplinary research and teaching in engineering, in collaboration with industry and assisted on a pump-priming basis by Government. (6.33)

9.21 Current levels of funding technological education and training are insufficient. If either the Government or industry thinks that the nation's economic problems can be solved without spending money they are deluding themselves. In addition to the transfer of funds, increased investment is essential. (6.34)

The Curriculum

9.22 The curriculum should include some lessons in basic economics and the significance of technological and industrial developments. Industrial problems should be integrated into the teaching of science and technology. It is the responsibility of industry to take the initiative in increasing liaison between schools and industry, which should be fostered at local and regional levels through the network of Science and Technology Regional Organisations. (7.6-7)

9.23 The efforts of the Equal Opportunities Commission, the Engineering Council and others to encourage girls to take up science and technology are supported. The emphasis of initiatives should be at primary school and in the early years of secondary school. (7.8-9)

9.24 All local education authorities should draw up programmes to develop the interest of girls in science and technology, making use of positive action in favour of girls. (7.10-11)

9.25 The unified examination at 16-plus is welcomed. At the same time there should be a rationalisation of the plethora of different syllabuses. (7.14)

9.26 Some instruction in mathematics, the sciences, and the humanities should be compulsory for all children in the UK up to age 16. (7.14)

9.27 A/S levels should be introduced as soon as possible. (7.15)

9.28 Efforts to upgrade the teaching of craft, design and technology are supported. Where possible, design elements should be integrated in the teaching of mathematics and physics. (7.16)

9.29 New schemes to develop the use of computers across the curriculum are necessary, with special attention to the retraining of teachers and the introduction of educational software. Consideration should be given to merging the Micros and Schools schemes and the MEP and establishing support on a permanent footing under the DES and Scottish Education Department. (7.17)

9.30 Computer centres should be established outside the classroom, either in colleges and HEIs, or in association with ITeCs, for use by schoolchildren and adults. (7.18)

9.31 The Engineering Council should use its powers of accreditation to further multidisciplinary development in the undergraduate syllabus. Courses structured around core modules should be more extensively adopted by universities. (7.21)

9.32 HEIs should consider setting up committees to facilitate liaison with industry and involving industrialists in some academic decisions. (7.23)

Teachers

9.33 To improve the supply and quality of teachers and lecturers, differential payments should be introduced for teachers in shortage subjects, particularly mathematics and the natural sciences, using the discretionary allocation of points on the Burnham scale and the power to pay differential salaries should be introduced for lecturers in important technological subjects. In HEIs consideration should be given to allowing teachers involved in industrially-related courses or research to earn an additional salary direct from course or research grant income. (7.25-6)

9.34 All secondary school teachers in the UK should be graduates or equivalent in the subject they teach. (7.28)

9.35 All initial teacher training should include some structured introduction to industry and the economic importance of wealth creation. Lecturers in further and higher education should be encouraged to broaden their experience of and contact with industry. (7.5)

9.36 Initial training for all primary school teachers should include an element of mathematics and basic science. (7.28)

9.37 The DES and local education authorities should take all steps possible to raise the level of in-service training of teachers. (7.29)

9.38 Industrial companies should increase their efforts to interest local teachers and headteachers in the company's business. They should consider putting on summer schools for teachers, and paying them their expenses. (7.4)

Industrial Training

9.39 Low levels of initial training and especially the inadequacy of continuing training are causes of concern and must be corrected. Correction of skill shortages lies mainly in industry's own hands. (7.30-32)

9.40 A national training levy should be introduced across all sectors of industry and commerce. The rate of the levy should be high enough to be effective, and should be remissible to those companies which engage in or pay for training. Firms employing less than ten people should be exempt. All in-house and some out-of-house training should count as a credit against the levy; if practicable, training for new technologies should qualify for a weighted credit. (7.35)

9.41 Work experience and sandwich courses are important. The CBI should investigate the availability of industrial placements for students on vocational courses, especially undergraduate courses in engineering and technology, and take steps to ensure that the number of placements increases. (7.22)

9.42 In collaboration with both sides of industry and the Education and Training Board the Government should establish a national training policy. As the national training authority, the MSC should implement the policy, employing the existing bodies in the training field as its managing agents. (7.36)

9.43 The MSC should, on the advice of the Education and Training Board, implement programmes of special priority in training and retraining at technician and craft levels. (7.37)

9.44 Late developers at school should be given greater encouragement to enter industry as technicians and craftsmen. BTEC should take steps to publicise such possibilities among schoolchildren. (7.19)

9.45 Industry should be encouraged to identify its own skill requirements through the adoption of technical audits. Voluntary audits should be more widely adopted as standard company practice. (7.39)

9.46 Disclosure of expenditure on training should be included as a discrete element in company accounts. (7.40)

9.47 In its support schemes for technological improvement the DTI should make specific provision for the identification of the need for training and updating. In areas of skill shortage, grants for capital equipment should be conditional on the inclusion of the company's relevant training proposals in its application. (7.41)

9.48 The Ministry of Defence and other large Government purchasing Departments should devote more effort to monitoring training standards and technological skills among contractors. Consideration should be given to making the award of government contracts subject to stiffer conditions concerning such standards. (7.42)

9.49 Management education should include greater emphasis on technological skills and awareness. This should be encouraged not only by the Engineering Council but by the DTI and other relevant bodies. (7.43)

9.50 The extension of the use of distance learning for managers should be encouraged. The Government should support the development costs of such courses which include a module on technological development. (7.44)

Continuous learning

9.51 There should be a large-scale increase in provision of continuing education and in employers' updating and retraining programmes, which have an importance approaching that of initial education. Individuals will have to recognise the importance of self-improvement in retraining. (8.3-4)

9.52 Advice on the availability of post-experience courses should be part of the responsibility of the Education and Training Board. (8.4)

9.53 Employers should invest more in retraining and updating. Provision should mix on-the-job training in-house with instruction externally to the company. (8.8-9)

9.54 The short-term needs of industry can only be met by increasing further the amount of retraining and conversion courses. In particular there should be more courses designed to meet the needs of women re-entering employment. The Education and Training Board should advise on and monitor the quality and relevance of conversion courses. (8.2, 8.6)

9.55 There is great potential in techniques of distance learning; activity in this field should be expanded. (8.7)

9.56 The use of tutored video instruction should be widely adopted, notably in disseminating the teaching of centres of excellence through videoed lectures. Local colleges of further education, polytechnics and universities should provide tutors in association with the centres of excellence. There should be an expansion in the networking of computer-based training, at work and in the home. The Open University and Open Tech should take the lead in promoting such techniques. (8.10)

9.57 The Government should relax their insistence that all courses in continuing education should be self-financing, and should support some courses with additional funding on the advice of the Education and Training Board. Short courses aimed at technologists are particularly important. (8.5, 8.11)

9.58 The Committee propose two methods of funding post-experience courses:

(a) Support could be geared to industrial sponsorship of new courses, where industry contributes at least 50 per cent of the cost of development and student support. The Education and Training Board should have responsibility for assessing the level of government funding.

(b) A fund could be set up to help medium and small-size businesses in particular which give paid leave for upgrading and updating courses. (8.11-12)

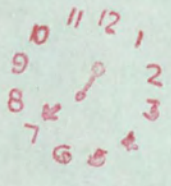
9.59 ITeCs should be developed as local centres of training and retraining of adults in IT skills. (8.13)

9.60 A grant element should be introduced to the funding of updating courses put on by the Open University. (8.14)

9.61 The Open University should broadcast material from courses put on by other HEIs; modules from separate HEIs could be combined to form courses leading to an OU degree. (8.14)

9.62 The Educational Counselling and Credit Transfer Information Service (ECCTIS) and the PICKUP-sponsored directory of vocational short courses are welcomed providing that they are sufficiently funded and publicised. (8.15)

9.63 Credit transfers for long courses should be encouraged by the clear stipulation of entrance requirements for new courses and by publicising them through ECCTIS and this should be extended to existing courses as well. Credits should be given for attendance on short courses. (8.16-17)



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The Rt Hon Sir Keith Joseph Bt MP
Secretary of State
for Education and Science
Elizabeth House
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11 February 1985

Dear Keith,

HOUSE OF LORDS SELECT COMMITTEE ON SCIENCE AND TECHNOLOGY: SUB COMMITTEE ON EDUCATION AND TRAINING FOR NEW TECHNOLOGIES

Thank you for your letter of 23 January.

I quite agree that we shall have to give very careful thought to our reply to this substantial document. It is clear that your Department should take the lead, though we have reservations about several of the proposals and I am keen for our officials to stay closely in touch.

I am copying this letter to the Prime Minister, Michael Heseltine, Norman Tebbit, Peter Rees, David Young, Sir Robert Armstrong and Sir Robin Nicholson.

Yours

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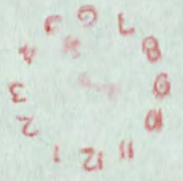

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Secretary of State for Trade and Industry

31 January 1985

Rt Hon Sir Keith Joseph Bt MP
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Department of Education and Science
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London SE1 7PH

Dear Keith.

HOUSE OF LORDS SELECT COMMITTEE ON SCIENCE AND TECHNOLOGY:
SUB-COMMITTEE ON EDUCATION AND TRAINING FOR NEW TECHNOLOGIES

Thank you for sending me a copy of your letter of 23 January to Tom King.

2 I agree that the sub-Committee's report is a substantial document, and that we shall have to give very careful thought to the Government's reply. It is clearly for your Department to take the lead, and I am quite content with the arrangements you propose.

3 I am copying this letter to the Prime Minister, Michael Heseltine, Tom King, Peter Rees, David Young, Sir Robert Armstrong and Sir Robin Nicholson.

Yours Norman

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