

Steering Committee on Technical Education

Report

to the Minister for Education

on

Regional Technical Colleges



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DUBLIN:

PUBLISHED BY THE STATIONERY OFFICE

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DUBLIN 1

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Price: Three shillings and sixpence.

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REPORT

1. FOREWORD

In carrying out our assignment, we were in communication, directly or indirectly, with many individuals and groups of people representative of a large number of public and private organisations. We are happy to acknowledge the advice, information and other assistance we received from them.

It would be almost impossible to refer specifically to all of the people who helped us, but we are particularly appreciative of the co-operation of Mr. S. O'Connor, Assistant Secretary, Development Branch, Mr. M. O'Flanagan, Chief Inspector, Technical Instruction Branch, inspectors and other officials of the Department of Education, Chief Executive Officers and members of Vocational Education Committees in the Regional College centres and elsewhere, teachers and administrative staff in technical schools and colleges and inspectors in the Department of Agriculture, all of whom gave their time generously to us.

We were fortunate in having the services of two members of the Department's staff in particular available to us. Mr. J. P. Sheehan, our Secretary, was seconded whole-time from his normal duties as District Inspector in the Technical Instruction Branch for most of the period of our activities, and was responsible for most of the detailed analysis underlying the preparation of the physical brief for the Colleges. Mr. W. J. Hyland, Senior Statistician in the Development Branch, also devoted considerable time to us, not only in the development of projections of student population in the Colleges, which were basic to subsequent planning, but also by attending in a more general advisory role at most of the meetings of the Committee. We wish to express our special thanks to both of them.

We are also very grateful for the valuable clerical, secretarial and technical services in the preparation of our report which we received from a number of people in the Department of Education and in the organisations in which we ourselves are employed.

We realise that the successful completion of an assignment such as this is the product of the co-operation of a large number of individuals, many of whom cannot, in the nature of things, receive full acknowledgement of their efforts. To all, therefore, who have assisted us in any way in the performance of our task, we extend our sincere gratitude.

2. INTRODUCTION

The Committee was set up on 20th September, 1966, and given the following terms of reference:—

“To advise the Minister generally on technical education. In particular, on behalf of the Minister, to provide the Department of Education Building Consortium with a brief for the technical colleges.

“The committee should ensure, in as much as it is possible, that their brief will harmonise with any future thinking on third level technical education.

“The committee in preparing their brief should consider all matters relevant to such a task.”

We were at the same time informed that it had already been decided to build eight regional technical colleges at Cork, Limerick, Waterford, Galway, Sligo, Dundalk, Athlone and Carlow. We were asked for advice on the need for a ninth college in Letterkenny, Co. Donegal.

We established liaison with the Consortium of Architects, Engineers and Quantity Surveyors which had already been appointed to design the colleges at Waterford, Sligo, Dundalk and Galway and to act as advisers to the architects appointed by local Vocational Education Committees at the other centres. We discussed with the Consortium what the brief should contain and received a memorandum from them setting out their views in this matter. We then prepared an outline of the development of the brief and a statement of the organisational relationships within which the Committee would operate.

We held seventeen ordinary meetings and had several other meetings with officials of the Department of Education and with the Chief Executive Officers in the centres designated for the Regional Technical Colleges. We also met the Cork City Vocational Education Committee and the Planning Sub-Committee of the City of Dublin Vocational Education Committee. Other meetings were held with the Council for Education, Recruitment and Training for the Hotel Industry (CERT) and with the Council for Science and Technology. In addition a large number of bodies concerned in varying degrees with technical education were sent circulars requesting their views on particular regional or national requirements or on any matter regarded as relevant to the work of the Committee.

An analysis of skilled and semi-skilled industrial employment on a regional basis from the most recent (1961) census figures was circulated to the various agencies most likely to be able to furnish detailed information in this field. A discussion was also held on technical manpower projections with Professor W. J. L. Ryan of the Economic Development Branch of the Department of Finance with the objective of providing a check on projections of output of qualified personnel which would be the main basis for planning accommodation requirements.

Members of the Committee visited a number of technical schools in Cork and Limerick offering courses of the type envisaged for the Regional Technical Colleges. The Chairman visited technical colleges in Denmark, and a study visit to England was made by a small group of members, who also consulted with officials of the Department of Education and Science in London.

To enable the design team to progress, a report embodying a Preliminary Brief was made available to the Department in January, 1967. A limited number of copies was circulated to Department officials with whom the proposals were discussed early in February. The report was also given to the Consortium. At the Minister's request the preliminary brief report was not taken beyond the draft stage; this was to enable the Committee to review the brief in the light of the recommendations of the Commission on Higher Education, and to comment on the implications of their Report.

The task we faced from the beginning was complicated by the fact that the Consortium and the other professional design teams had already been appointed and were awaiting a brief, leaving very little time to consider all the implications of our assignment. The education to be provided in Regional Colleges covered a very wide range, including senior cycle post-primary, apprentice and technician courses, and various types of adult education, and spanned a correspondingly diverse range of occupations in technical, scientific, commercial, catering and other fields of specialisation. The Department was not in a position to provide us with the supporting services necessary for an undertaking of this kind, due in particular to the fact that the educational development unit recommended in the O.E.C.D. "Investment in Education" report has not yet been fully staffed.

3. NEED/DEMAND FOR TECHNICIANS AND SKILLED PERSONNEL

The *need* for certain kinds of education and training must be distinguished from *demand*. This point has been made many times in reports in the past few years. A business firm or a national economy must adapt in order to survive in a changing environment, and the environment for Irish industry will be changed radically by free trade conditions with Great Britain and by probable entry to the Common Market. If the demand for needed skills does not arise naturally, it must be stimulated artificially. We feel that the Regional Technical Colleges will provide one of the answers to this problem.

Irish people generally have not had the opportunity to become technically skilled and the academic bias in the educational system has not helped. This leaves a serious gap in the stock of knowledge and skill necessary for the development of productive enterprise.

Our views on this matter are summarised as follows :

- (a) The availability of increased technical knowledge and skill at all levels is a necessary, though not sufficient, condition for further economic growth and the promotion of innovation and enterprise amongst the people. Ireland has largely failed to provide this resource;

- (b) The projections of output of qualified technical personnel from the education sector must take into account the probability that some of those qualifying from Regional Colleges may choose to work abroad because of the world shortage of such personnel;
- (c) Due account must be taken of the economic and social needs of developing regions, where investment in education is a necessary part of industrial development. The lack of productive enterprise in these regions is partly due to an economic, educational, cultural and social environment which has not encouraged its development.

One of the ways in which demand could be stimulated would be to give due recognition to the various awards to be obtained in the Regional Colleges. We recommend the establishment of a National Council for Educational Awards, responsible for (i) setting standards of admission to, and qualification from, courses in technical education, (ii) approving examination syllabuses and appropriate courses provided in Regional Colleges or other technical schools, (iii) awarding certificates and diplomas to those successful in approved examinations and (iv) negotiating reciprocal recognition of equivalent qualifications with other countries, particularly Britain and the E.E.C. At the highest levels, the Council would discharge functions similar to those of the Council for National Academic Awards in Britain, but it would also be responsible for awards at technician and craft levels. It would be duly representative of educational and professional institutions, industrial, commercial and cultural interests, and the appropriate State departments.

4. PROBLEMS IN ASSESSING REQUIREMENTS

The many existing reports and discussions relating to technical education at sub-professional level are inconclusive because the demand for technical personnel by industry is insufficiently specific to determine the education and training requirements in any detail.

In order to obtain a basis for projections of student population, we prepared a flow diagram [Appendix 1 (a)] (based on Table 6.25 of "Investment in Education") showing the input, stock, and output figures for various types of

school courses, over the full post-primary range. The flow diagram relates to boys only. It was immediately evident from the diagram that activities within the vocational education system at the technician and higher levels were very limited in scope and of very small volume in relation to the remainder of the educational sector. They also compare unfavourably with the situation obtaining at these levels in other European countries, as is illustrated by the flow diagrams shown in Appendix I (b), which are taken from the EUSEC report on Education and Training of Professional Engineers (Volume I, revised 1964).

What was also evident was the general absence of senior cycle, second level programmes in vocational schools (except for a small number of courses in the Dublin Colleges of Technology and Commerce and in a few other centres)—a shortcoming frequently referred to in educational circles in recent years.

In the course of our deliberations we were repeatedly faced with problems arising from the sparseness of information on which adequate projections of the likely demand for places in the Regional Technical Colleges and of demand by industry and other sectors for the products of the Colleges could be based.

Our experience leads us to emphasise what cannot be said often enough—that educational or economic planning is not realistic without a continuing system of manpower supply and demand forecasting.

We considered this problem so acute that we have requested the Minister to explore the possibility of inviting some outside consultancy or research organisations to conduct feasibility surveys which would evaluate in terms of cost and time the implications of providing relevant forecasts. The forecasts required would indicate:

- (a) The demand for places in the Regional Technical Colleges;
- (b) The demand by the community as a whole for the products of the Colleges.

The forecasts would involve a study of the utilisation of existing technically qualified manpower, which in itself would be of value.

While in principle it would be desirable to do these feasibility surveys in relation to a complete manpower

demand/supply forecast it might be more practical to invite the research organisation to attempt to identify critical sectors in the Regional Technical College supply/demand area and forecast these only. Ideally this information should be available in time to be used in the final detailed planning of the Colleges.

Nevertheless, we believe that reasonable projections can be made, on the basis of existing data, which will be sufficient to provide the consortium with the information necessary to begin their work. To this end, we identified the courses which the Colleges could reasonably be expected to provide. Following detailed study, we projected the numbers anticipated for these courses and the expected distribution of these courses and numbers throughout the various Colleges. The object here was to provide a physical plan within reasonable limits, not to decide finally what specific courses should be carried on in any one College, although many of those are self-evident.

In considering the courses which should be provided in specific Colleges the Committee have tried to take account of current and estimated national and regional needs. But a degree of uncertainty in forecasting is unavoidable. We therefore consider that the building design must take two important variables into account; firstly in regard to size since only a general approximation of the numbers required can be offered at this stage and secondly in regard to mixes i.e. the relationship in number between those pursuing the various courses. We believe that these problems can be overcome by a concept of a flexible building design. For that reason we suggest three cardinal points in the building plan, namely (1) that the sites chosen for the Colleges should be large enough to accommodate a very much larger complex of buildings than that at present envisaged, (2) that the type of building design should be such that each College can be extended readily and easily without interfering with its essential unity and coherence, and (3) that the basic services provided initially should be capable of supporting a building complex of twice the size suggested in this interim report.

We later suggest that the supervisory staff (Principals and Heads of Departments) should be appointed at least a year in advance of the opening date of the Colleges because we feel that the advice of these persons in constant touch with

local demands could also help considerably to modify or vary details in accommodation as the project progresses. We also noted that the availability of more and better trained teachers would be a critical need in improving the present situation. In this connection, it is of great importance that those recruited to technical teaching should have had substantial practical experience before recruitment. This is not always the case in certain areas at present.

5. ROLE OF THE REGIONAL TECHNICAL COLLEGES

We gave careful consideration to the range and levels of courses which should be provided in the Regional Colleges. We have discussed this matter with Department of Education officials and with representatives of many other educational interests. We have also taken into account the written submissions of a number of outside organisations in industrial and other fields.

We believe that the main long-term function of the Colleges will be to educate for trade and industry over a broad spectrum of occupations ranging from craft to professional level, notably in engineering and science but also in commercial, linguistic and other specialities. They will, however, be more immediately concerned with providing courses aimed at filling gaps in the industrial manpower structure, particularly in the technician area. For reasons outlined later [Section 6 (1)], we also consider that the Regional Colleges should cater for certain types of senior cycle post-primary education.

We do not foresee any final fixed pattern of courses in the Colleges. If they are to make their most effective contribution to the needs of society and the economy they must be capable of continuing adaptation to social, economic and technological changes. Initiative at local and national levels will largely determine how far this vital characteristic is developed. We are concerned that the progress of these Colleges should not be deterred by any artificial limitation of either the scope or the level of their educational achievements.

It was assumed for planning purposes that the following courses would be provided in the Colleges in the initial stages of operation:—

- (a) Two and three year wholetime and equivalent part-time **Senior Cycle Post-Primary** courses leading to the Leaving Certificate with a special bias towards commerce, science and technical subjects. The third, or advanced, senior cycle year may lead to a higher level of attainment in one or more subjects with the object of qualifying for student membership of professional institutions, preparing for entry to particular courses in a university or other college, or preparing for entry to particular fields of employment.
- (b) **Junior and Senior Trade Certificate** courses on day or block release for local apprentices, and on block release for apprentices from a wider area (possibly the entire region, or in exceptional cases the whole country).
- (c) Part-time day, block-release and whole-time courses for **Technician** qualifications at various levels, e.g. draftsman, laboratory assistant, agricultural technician.
- (d) Post-Leaving Certificate whole-time courses over two or more years, or equivalent part-time courses leading to **Higher Technician** qualifications or in some cases to full professional level. It is envisaged that only a small number of Colleges will offer full professional courses.
- (e) **Adult education** courses, including retraining courses which may be provided by agreement with An Chomhairle Oiliúna.

We anticipate that entry to the Technical Colleges will be available only to pupils who have completed the junior cycle of the post-primary course, though some exceptional consideration may need to be given to adult students. The Committee envisages that (e) above would include supervisory and management subjects where appropriate. Elements of management education would also be included in other types of courses, particularly in the higher technician and commercial specialities.

6. ANALYSIS OF COURSES AND STUDENT POPULATION

Before making this analysis, we found it necessary to indicate "regional catchment areas" for each College. These

are shown in Appendix II. It should be emphasised that they were defined for the purpose of making projections of student population and are not intended to have any other significance.

(1) SENIOR CYCLE POST-PRIMARY

We considered very fully the implications of providing Leaving Certificate courses in the Regional Colleges. We saw advantages in (a) the exemplary influence these Colleges should have on similar courses in other schools, (b) the integrated educational structure above the compulsory school-leaving age which would result, (c) the desirable socio-educational environment which would be promoted thereby, and (d) the provision of scientific and technical education for girls which would not easily be made available elsewhere. We recognised on the other hand that some other post-primary schools in the regions might in consequence be limited to providing courses up to Intermediate Certificate level with the disadvantages which that situation would entail. The Leaving Certificate courses in the Colleges might also be regarded initially by some people as too technically biased and therefore restrictive both of the overall development of the students and of their subsequent educational or employment opportunities. It was felt, however, that both these latter considerations would be of transitory significance and would not in any event be sufficient to offset the benefits outlined.

We also bore in mind that the provision of Leaving Certificate courses in the Regional Colleges would assist in ensuring their economic viability in the early years of occupation, thus providing a "bridging" effect during a period of developing demand by industry for technicians. The emphasis on senior cycle courses may be diminished after some time if facilities for science, technical and commercial education improve sufficiently in other post-primary schools. Any such change is likely to be paralleled by a growing demand for apprentice, technician and other higher courses in the Colleges.

The advanced senior cycle courses referred to in Section 5 (a) are intended to give students already qualified to Leaving Certificate level the opportunity to pursue specialised

scientific, technical and commercial studies in a more limited range of subjects, with the objects stated therein. It is not envisaged that courses at this level and in these specialities would be provided generally in vocational schools.

We made projections of student population in 1972 in the junior cycle in vocational schools based on an increase of two-thirds from 1965 in the numbers reaching a standard equivalent to the Group Certificate. We estimated that about half of the boys and two-thirds of the girls reaching this level would proceed to third year Intermediate Certificate courses. Thus about 3,500 boys and 3,000 girls would enter the third year. We assumed that about one-third of these in all would go on to take the Leaving Certificate. It was also assumed that initially only 5% of the students completing Intermediate Certificate at secondary schools would transfer to technical education for senior cycle courses. This gave a figure of 6,000 representing the total stock in the two senior cycle years and it was assumed that the distribution geographically would be generally similar to that of the 1965 Group Certificants. It was also assumed that one-fifth of the students would stay on for a further year's advanced senior cycle course and that their distribution between regions in this case would be somewhat the same.

The resulting projections at senior cycle and advanced senior cycle are shown in Appendix III.

Consideration was given later to the effect of increasing the radius served by the Colleges to about 30 miles by means of special transport schemes. We felt that students should, as far as possible, be given the option of pursuing the kind of Leaving Certificate course which would be available in the Regional Colleges as an alternative to that ordinarily available in post-primary schools. The 30 mile radius figures are also given in Appendix III. It will be noted that they represent a very large increase in the stock at Leaving Certificate level, more than doubling the senior cycle population in some centres.

(2) CRAFT APPRENTICES

The major growth in demand for craft apprentice education and the existing limitations in facilities at this level in vocational schools led the Committee to conclude that large

scale provision for apprentices' courses in Regional Colleges would have to be made.

From figures supplied by An Chomhairle Oiliúna, showing the distribution of the craft apprentice population by county and in the major urban centres, the numbers resident in each Regional College area were approximately estimated after making arbitrary allowance for the division of counties by regional catchments. In the major group of mechanical engineering trades, an analysis by individual trade specialities was not immediately available from the An Chomhairle Oiliúna figures. Since, however, the fitting and turning trades are understood to account for about three-quarters of the total in this group, the effect on planning of accommodation schedules will be a minor one, affecting only the Regional College centres in Cork and Limerick. Again in the case of the printing and furniture trades a full regional breakdown was not possible, but since the centres which will provide apprentice courses in these trades are few in number and already established in most cases, this defect is not significant.

It was assumed that the apprentice population would increase by about 30 per cent over present figures by 1972. The numbers in particular trades in many Regions are very small, and therefore insufficient to justify the provision of facilities for courses in all of the Colleges.

It was also expected that many of the smaller vocational schools would be able to provide junior apprentice courses in the more common trades as heretofore, whereas the bulk of senior stage instruction would take place in the Regional Colleges.

Courses in the four major trades of carpentry and joinery, automobile engineering, electrical installation and mechanical engineering, are common to nearly all centres, while the remainder tend to be confined to Dublin, Cork and Limerick. There is an estimated overall national requirement of educational facilities for nearly 11,000 craft apprentices, though this assumes that virtually all of these will come within the scope of relevant legislation and will therefore be required to attend courses. In view of the national policy of extending opportunities for education to all apprentices, it was thought advisable to act on this assumption in planning accommodation schedules on a medium or long-term basis.

(3) DISTRIBUTIVE TRADES

With the aid of a report prepared by the Irish National Productivity Committee, which analysed employment in the distributive trades using figures from the 1956 Census of Distribution and the 1961 Census of Population, employment in distribution in the Regional College areas and the numbers of learners and apprentices in the more common trades were estimated.

Hitherto school courses for the distributive trades have been almost completely confined to Dublin, but it was felt that demand in the regions was likely to develop in coming years. The number of apprentices in these trades indicated that some provision should be made for suitable courses in other centres. While it will take time to develop a pattern of day or block-release outside the Dublin area, the growth of such courses to a substantial extent is anticipated in the schedules of accommodation we prepared. Our views in this matter are supported by the Distributive Trades Committee of the Irish National Productivity Committee, representatives of which were consulted by the Steering Committee.

(4) TECHNICIANS AND HIGHER TECHNICIANS

The Committee does not put forward any precise and common definition of the word "technician". The word carries different shades of meaning in different fields of endeavour and it is more important to cater for these in practice than to attempt precision in terminology.

Fortunately there is a good deal of common understanding of what is meant by a "technician". We see him broadly as occupying an intermediate position between the craftsman and professional man. He may, as examples, be supervising craftsmen; doing design work under supervision; assisting the professionally qualified technologist; working as a junior-level manager or administrator; or acting as an auditing clerk under a chartered accountant.

His course will include general education subjects as well as theoretical and practical work in his field. The proportions of skill and knowledge or of theory and practice to be imparted will vary for different types of technician.

Before making an analysis of requirements at this level, we consulted a number of more recent reports on the education and training of technicians, including the O.E.C.D.

reports on "Training of technicians in Ireland" and "The education, training and functions of technicians in the United Kingdom", the report of the Institution of Civil Engineers of Ireland on "The Education and Training of Engineering Technicians", and a paper by Dr. H. W. French, Chief Inspector of Further Education in England and Wales, (read at the Conference on Education and Training of Technicians, Huddersfield, 1966).

By combining related specialities, we reduce about 50 separate technician categories originally listed down to 18 specialisations requiring specific courses. Only a few of these are catered for in existing well developed courses, and projections on the basis of existing populations are, therefore, not feasible. We took into account, however, a variety of factors most of which we were not in a position to quantify, namely,

- (i) existing and projected industrial activity in each region;
- (ii) potential development in particular sectors of manufacturing and service industry;
- (iii) the inherent value of certain facilities for educating technical personnel in the interests of encouraging industrial development;
- and
- (iv) the desirability on grounds of social policy of providing facilities for higher technical education.

In making our estimates of student population we had regard also to the estimated shortages and projected needs for technicians as set out in the recent report of the Research and Technology Survey Team. They estimate current shortages of 1,700 technicians in industry and 200 in higher education. Taking the figure of yearly output to cover wastage and growth at about 525 and assuming similar growth rates to 1972, the annual requirement would be about 750, allowing ten years to make up present deficits. Since it is very unlikely that present educational resources can cope even with present demand an increase in the technician shortage will probably have also occurred in the interim period. Accordingly, an annual output target of about 1,000 technicians would not appear excessive assuming shortages are to be eliminated by 1980 or thereabouts. Including commercial and other categories of technician not covered by the Research and Technology Survey Report, a total of 1,260 was taken to be

required annually. It was assumed in allotting courses to the Colleges that Dublin, Cork and Limerick would cater for the bulk of requirements, while the remaining six or seven Colleges would provide for small numbers distributed roughly equally between them.

We expect that the majority of courses would tend towards two years' duration rather than one.

Annual output at the higher technician level was arbitrarily taken as about one-third of that at the ordinary technician level. We projected an annual output of 375 higher technicians in Dublin, Cork and Limerick, covering 10 specialities. Due regard was had to modest growth and wastage factors on a three years' course.

(5) PROFESSIONAL COURSES

At present about 50 students per annum graduate from Colleges of Technology in Dublin from professional courses in all of the disciplines combined (architecture, surveying, science, electrical and mechanical engineering). The enrolments in the early years of these courses are large but there is high wastage (about 400 students are enrolled in all). We assumed an increase to 80 in 1972. There are no full courses to graduate professional level developed as yet in Cork or Limerick technical institutions, and therefore no current figures on which projections of output or stock can be based. The numbers shown under this heading in Appendix III are intended to be indicative only of the probable levels of output and stock at the two centres. Cork and Limerick may be expected to offer professional courses in one or two specialities where a demand is clearly established. A special situation exists in Limerick, as it lacks the alternative of university courses; this matter is the subject of further comment later in the report.

Exemptions from the earlier parts of such courses may be granted to holders of certain technician qualifications; this will depend on the educational standards established by professional bodies in the relevant fields. We considered that while demand for professional courses arising in this way out of technician courses may be expected, and indeed should be encouraged to grow, provision should also be made for a separate path to professional education in certain fields.

(6) HOTEL AND CATERING INDUSTRY

CERT submitted their projections of training requirements for the hotel industry and subsequently discussed these with us at a special meeting. Their requirements then indicated a total stock of 2,000 students as a basic requirement—a very high figure in relation to the total stock projected for the Regional Colleges in 1972.

On consideration of CERT's proposal for the deployment of the 2,000 students throughout all the Colleges, it was apparent that the effect on the size of the smaller ones would be out of proportion to the remaining activities in each centre (these figures will be included in the final report). The capital cost of providing for this number would be about £1,500,000.

Following analysis of their figures, we discussed with CERT their implications for the project as a whole. CERT then submitted a report by an independent economist confirming their projections of total annual increase in employment in the hotel and catering industry. We have considered this report and are now recommending a provision which, while it falls short of that proposed by CERT, is the largest which we feel we can prudently make at the present time, taking into account the existing pattern of employment and training in the industry. Our proposals should be regarded as the first phase in providing for this sector. They will represent a major addition to present facilities. As will be seen in Appendix III, a total national stock of about 1,700 students is projected for 1972 in the Regional Colleges together with the College of Catering in Dublin.

We consider that, since wholtime and block release will in any case be involved and specialised teaching staff will be in short supply, one Regional College should initially be the main centre of CERT activity with as much preparatory work as possible being carried out in other centres. Thus, for example, wholtime courses in hotel management which are specified by CERT as being of three years duration, include many subjects, such as Accountancy, Management Principles, French, Sociology and Hotel Law, not requiring specialised accommodation, which may therefore be provided in many centres. There are similar examples in other courses particularly those above craft level.

The residential schools of Domestic Science supported by the Departments of Education and Agriculture provide

valuable training for girls preparing for entry to the hotel and catering industry as cooks and housekeeping assistants. Craft training for boys is available in a small number of centres in vocational schools and other institutions apart from the major College of Catering in Dublin. It is recognised that training of this kind has its limitations for hotel purposes, but if supplementary education and training in a special CERT centre is made available, the overall programme should prove effective.

We therefore recommend that the Galway Regional College should be designated as the main CERT centre outside Dublin. It should be in a good position to call on the facilities of local hotels for practical training in the off season. The other Regional Colleges should have more limited facilities to cater for day-release requirements in their own areas, with perhaps some element of block-release for personnel not requiring more than one or two terms of instruction in all. They could also of course share in preparatory instruction of the kind referred to above. The Head of Catering Training in Galway together with his counterpart in Dublin and with CERT itself could co-ordinate the total student programming effort. Good programming (as between preparatory training in other centres, training in Galway, and practical work in hotels) will be the essence of good results in terms both of quality and costs.

The Galway brief should therefore be expanded to include a special CERT wing or unit of the Regional Technical College to accommodate from 500 to 600 students. A separate addendum to the Galway schedule of accommodation will be prepared if this recommendation is accepted.

(7) AGRICULTURAL INDUSTRY

The quality of Agricultural Technology in Ireland will be a vital factor in meeting the challenge of freer and more competitive market conditions in the future. This implies that progressively higher levels of general and technical education will be required of those engaged in the industry. The Committee believes that less specialised study options should remain open to students for as long as possible so that they can successively relate their studies to developing aptitudes and abilities.

We sought and received submissions from An Foras Talúntais (The Agricultural Institute) and other interests connected directly or indirectly with Agriculture. We also discussed the role of the Regional Technical Colleges in relation to the requirements of agriculture with a group of Inspectors from the Departments of Agriculture and Education.

The general consensus of opinion was that the Regional Colleges could best contribute to the educational needs of personnel in farming and industries allied to it, by providing courses in science, particularly the biological sciences, and technical subjects.

The senior cycle post-primary programmes for the Leaving Certificate should include Biology as a subject available to all schools—due account being taken of local environment in developing these courses. The advanced senior cycle year should provide a progressive orientation towards the applied side.

We consider that the relative functions of the Regional Colleges on the one hand and of the Agricultural Colleges and other institutions providing specialised agricultural courses on the other, can best be distinguished by recognising three broad groups, namely:—

- (1) Persons who will be engaged directly in farming or who by reason of their work require a full practical knowledge of agriculture—e.g. farmers, government officials and others directly concerned with crop and livestock husbandry, and horticulture.
- (2) Laboratory and factory-based personnel. These are people who may be regarded as incidentally concerned with agriculture and whose main educational needs are in the scientific sphere—e.g. technicians for the food and fertiliser industry.
- (3) An intermediate group who require a combination of scientific and technical skills with a good knowledge of farming—e.g. government officials and others concerned with land reclamation and farm buildings and also salesmen of agricultural machinery and animal feeding stuffs.

We envisage that the Agricultural Colleges would have a dominant role in catering for Group (1) while the Regional Colleges would carry the main responsibility for educating

Group (2). An integrated scheme would be necessary for Group (3) where, for example, students would attend a Regional College for one year and an Agricultural College for a second year.

The food industry is likely to be one which will increasingly demand organised training. We draw attention in particular to the meat trade where new skills will be demanded of butchers and others employed by fresh meat and bacon factories. The Regional Technical Colleges should provide facilities for this training.

In view of the foregoing considerations, we do not now recommend the provision of specialised facilities for agricultural education and training in the Regional Colleges. Some of our members are of the opinion that consideration should be given to providing full agricultural education in one of the Regional Colleges—perhaps in Carlow or one of the North-West centres. In any event we urge that in the development of existing courses in agriculture and in planning future ones the maximum possible use should be made of the facilities in the Regional Colleges, so that agricultural education may be provided in direct association with them. To this end we wish to see a close working arrangement develop between the Regional Colleges and the Department of Education on the one hand and the Department of Agriculture and the Advisory Service on the other.

(8) ART AND DESIGN

In the highly competitive situation which will arise within the next few years a lack of certain resources will make it increasingly difficult for most Irish industries to match their foreign competitors in terms of investment in marketing and research, to mention but two areas.

In this situation we must rely on intellectual abilities to which have been added a high degree of skill. If we cannot make things as cheaply, we must learn to make them, and sell them, better.

In Ireland there has been for a long time a divorce between technology and art. The report of the Council of Design says :

“The ending of this divorce has been our aspiration in considering the mobilisation of existing design talent and the education and training of new designers”.

One of the chief characteristics of the markets to which we are most likely to export is a high degree of design consciousness. Exporting will not be successful unless we meet these design standards.

We feel that courses in design should be provided in as many Colleges as possible. As a start, Carlow springs immediately to mind, because of its proximity to the Kilkenny Design Workshops. We also endorse the comment of the Council of Design on art courses in secondary and vocational schools :

“The course in art should be broadly based and should include design and craft work and appreciation both of the fine arts and the design of everyday objects”.

(9) ADULT EDUCATION

The NIEC Report on Full Employment refers to the need for “further education and training for those already in the labour force and it is possibly in this direction that the greatest progress could be made within a relatively short period of time”. It refers to a pilot study “to determine the extent of the problems which further education and training schemes might meet and to assess the degree to which the general level of education of those now at work would need to be raised”. We feel that a joint group from the Departments of Labour, Agriculture and the Development Branch of the Department of Education could conduct such a study—but the Department of Education would need to expand its team of professionals to meet the recommendations of the “Investment in Education” OECD report before engaging in this exercise.

In the meantime we observe as follows:—

- (a) Education must be seen as a continuous process, not confined either to particular age groups or particular institutions. The object of adult education, therefore, must be to provide opportunities for this continuing process of education, to all adults and at all levels, in so far as it is possible to do so.
- (b) The success of adult further education and training depends heavily on the existence of enthusiastic teaching staff. A good principal and first rate department heads in the Regional Colleges can identify

- local needs through a sound personal knowledge of the problems and through the local advisory committees (see Section 9).
- (c) This need for the development of the existing stock of manpower must have high priority in investment allocation. Regional Technical Colleges would seem to be the ideal local centre from which the enthusiasm for the updating of knowledge and skills can emanate. The influence of An Chomhairle Oiliúna should accelerate this development.
 - (d) A detailed list of adult courses is not given here because it is felt that the facilities allowed for in the brief will cover most of the needs which a Regional Technical College staff will determine locally.

(10) OVERALL NATIONAL TARGET PROJECTIONS

Appendix III summarises the estimated student population in Regional Technical Colleges in 1972 embracing senior cycle, advanced senior cycle, apprentices, technicians, higher technicians and professional grades. Including Dublin, the total stock of all these grades of student population comes to 15,485. Excluding Dublin, the total is 9,055 of whom 6,175 or 68% are at Cork, Limerick, Waterford and Galway.

We consider that the Regional Colleges fall into three main groups:

- (i) Cork and Limerick which, with Dublin, constitute the main industrial centres where further major industrial expansion can be confidently expected;
- (ii) Waterford and Galway which have been designated officially as development centres;
- (iii) the other five centres where it has been decided to establish Regional Technical Colleges. We anticipated that the last group would probably not grow industrially as rapidly as group (ii) although Dundalk and Carlow appeared to us to have greater immediate potential than the other centres in the same group.

We envisage that higher technician courses will initially be provided only in the Group (i) Colleges because of the limited demand for such courses and the expensive provisions required in teaching staff, equipment and buildings.

Courses at ordinary technical level will also be a major feature in the Group (i) Colleges. They will, indeed, be the

main centres of education at this level. Apart from the economic advantages inherent in the common use of equipment and facilities by students at different levels in related specialisations, we also thought there were considerable educational benefits to be derived by both students and teaching staff from the opportunities which such an arrangement would provide for inter-disciplinary communication, and for liaison with industry in the major centres. Some courses at the technician level were reckoned to be of sufficiently general relevance to a variety of industrial occupations to justify their provision in nearly all centres, while the concentration of particular industries in certain smaller centres made them fairly obvious choices for specialised courses, e.g. in the case of the food industry at Carlow.

The picture which emerges from Appendix III is substantially in accordance with the guiding considerations already outlined. Thus the student populations in the Colleges in the larger industrial centres at Dublin, Cork and Limerick reflect the capacity of these centres for absorbing technical and scientific manpower. Galway, Waterford, Dundalk and Carlow form a second group similar in level of requirement for technical and other qualified personnel (making due allowance for the CERT centre in Galway). Of the third group, with least requirements, Sligo and Athlone are again comparable in student numbers, with Letterkenny somewhat lower. The Dublin region requires about 40% of the total output from this sector of education, thus corresponding roughly with employment patterns in the technical manpower sector. While there must be some degree of uncertainty in the projections, the Committee are satisfied that the output levels shown in the technician and higher courses bear a more realistic relationship to the requirements of a developing industrial economy than do present outputs.

Though we are conscious of the advantages which could result from the concentration of courses in fewer centres, we feel that a well-distributed regional educational structure is economically and socially desirable. The relative importance of these factors at the different educational levels must be weighed in any attempt to arrive at an optimum educational policy regarding regionalisation.

7. IMPLICATIONS OF SUMMARY OF REPORT OF COMMISSION ON HIGHER EDUCATION

The Committee considered the Summary of Report of the Commission on Higher Education, particularly those sections dealing with Technological Education and Institutions of Vocational Education (Chapters 8 and 14) and with the New College proposals (Chapter 5).

The Commission recommended that Vocational Education Institutions should concentrate their resources on supplying the acknowledged national need for technicians, as well as providing courses at lower levels not coming within the purview of the Commission. Their Report did not recommend the removal of professional courses from the Dublin Colleges of Technology, but it was stated that "any proposed expansion of these courses should be examined in the context of the higher education system as a whole". The view was also expressed that there was not "the need, at the moment, specifically to provide in the vocational education system outside Dublin for the establishment of professional courses to graduate level in pure and applied sciences".

We have outlined in Section 5 of this Report the range of courses we envisage as being provided in the Regional Technical Colleges. Our views in that respect largely agree with those of the Commission on Higher Education, in that such courses concentrate mainly on technician and craft apprentice education together with senior cycle secondary work. In planning schedules of accommodation, separate provision for full professional courses was not made, though it was envisaged that many of the facilities recommended for higher technician courses (at Cork and Limerick only) would also serve the needs of students in these Colleges aspiring to professional qualifications.

The Commission envisaged that New Colleges would be established in certain centres and that they "would look to technical and vocational colleges for teaching in subjects forming part of New College curricula, e.g. commerce, science and music". They also thought that "in turn the technical and vocational colleges would look to the New Colleges for teaching in humane studies". Finally, they saw the technical and vocational colleges as having a co-operative role, within the New College system, in the training of teachers for

vocational and comprehensive schools, and considered that "the degrees and other qualifications of the New Colleges might also be used for the purposes of the technical and vocational colleges".

We do not agree with the Commission's views either on the entry standards appropriate to new third-level institutions or on the levels of academic qualifications they should award. We believe that an undesirable dichotomy in higher education would be created by establishing the norm for admission to degree courses in such institutions at a level inferior to that which would be acceptable to the existing universities. We also dissent from the suggestion that the level of attainment in such institutions should be limited to pass degree standard. No arbitrary limit should be set to their achievements, the sole criterion being one of merit, as otherwise potential students of outstanding ability living in their vicinity would have to go elsewhere to secure distinction in their chosen fields of higher education. There would also be an artificial disadvantage in regard to recruitment of staff, and a disincentive both to the development of new courses and facilities and the improvement of existing ones.

We find it difficult to determine from Chapter 9 of the Summary of Report whether the Commission envisages very substantial differences between the arrangements for general preparation and pedagogical training of teachers for the various types of post-primary school. There appears to be some suggestion that secondary teacher training would be provided mainly in the universities whereas other post-primary teachers would be catered for by some co-operative arrangement between New Colleges, institutions of higher vocational education and the teacher training colleges. In view of the unified approach to post-primary education now exemplified by the establishment of the Common Intermediate Certificate and the review which is now being made of the structure of the Leaving Certificate, we consider that any new schemes of teacher training should promote equality of standards of qualification rather than maintain differentials.

Reference has been made (Page 19) to the special situation existing at Limerick in regard to the provision of professional-level courses. The recommendation of the Commission that a New College be established there is, therefore, of particular interest. We believe that both institutions together, i.e. New

College and Regional Technical College should be complementary components of a single major educational complex on one site providing courses in arts, science, commercial and technical studies, up to graduate level, though the two Colleges of which it would consist could retain their separate identities and be separately administered. Provision might also be made for the training of teachers. Thus all the requirements envisaged by the Commission for New College and vocational and technical colleges both jointly and separately could be fulfilled.

8. RECRUITMENT AND TRAINING OF TEACHERS

Our projections indicate that the number of students in the Regional Colleges (excluding Dublin) will build up to about 9,000 over the first three years from the opening of the Colleges. We estimate that about 600 teachers will be required to cater for them, exclusive of supervisory staff who would number about 50 for all the Colleges.

These teachers will be drawn from a great variety of specialisations. We have not attempted a detailed break-down into individual categories, but we believe that our projections of student numbers in the different courses at each College, together with the outline curricula we prepared for each course, could be used by the Department for this purpose. We estimate very approximately that there would be about one-quarter of the teachers engaged in general and commercial subjects, including languages, and a similar number teaching practical subjects and related theory, in various engineering and catering craft specialities. The rest would be mainly teachers of science, mathematics and engineering subjects with a small number of other specialists, e.g. in hotel management.

The supervisory staff will include a principal, vice-principal and heads of departments in each College. These must be experienced people on first recruitment and will, therefore, probably be supplied from present stock. We think it necessary that they should be recruited at least a year before the Colleges open in order that they may be able to organise their Colleges and departments and participate in the recruitment of staff. They would also assist in the layout and equipment of the Colleges and perhaps visit other colleges abroad.

Teachers will also come from present stock but in many cases this will merely create a vacancy in the school they left.

The average number of teachers to be recruited annually to the Colleges for the first three years would, on the basis of our estimates, be about 200. Most of these would have to be drawn from special training courses, directly from employment in industry or from new graduates in the universities. We are concerned that all of them should have preparatory training as teachers and have considered various ways in which this might be arranged.

One possibility would be to provide scholarships to special teacher training courses. This might prove satisfactory in a limited number of cases, e.g. where new university graduates would attend a fairly short course of six or nine months duration just following graduation. There will, however, be large numbers of teaching posts for which industrial or commercial experience will be a necessary qualification. We think it unlikely that sufficient suitable candidates for such posts would be attracted to teacher-training courses because of the low allowances that would be offered while attending them. We consider that in these cases, teachers should be appointed in a permanent whole-time capacity for a period of up to six months before taking up duty to enable them to attend courses in pedagogics, to obtain teaching practice, and to adapt their technical knowledge for teaching purposes.

9. ORGANISATION STRUCTURE

In this section we make some general comments and suggestions on the type of organisation structure which might suit the Regional Technical Colleges. These suggestions are offered as illustrations and as a basis for further study.

The Regional Technical Colleges are in an area which spans both second and third level education and also covers adult education and retraining. There is a danger that they might fall between two stools. We feel very strongly that Regional Technical Colleges should be seen as a *new* concept operating under *new institutional arrangements*. A fresh image must be developed for technical education in each region with a Regional College at the focal point. At the same time these Colleges should be an integral part of the total educational structure.

It is clear that an organisation with national status is required for the Colleges. We consider related points raised in various reports on education including the report of the Commission on Higher Education (see Section 8), and we are forced to conclude that each group has tended to have regard only to their own immediate problems in their recommendations. We are now convinced that the Minister and his Department should carefully examine the way education *in general* is organised. We are prompted to ask why there should be a Commission on Higher Education only. Why not a Commission on *all* education with sub-commissions for each aspect? However, this is a matter for the Minister and is outside our terms of reference, but since the success of the Regional Technical Colleges is bound up with some such arrangements, we feel that we must offer these comments.

The Colleges are being set up to serve a region; this decision in itself indicates that education should be considered on a regional basis. The urban and county units are not broad enough and a national unit suffers through remoteness from the needs and aspirations of local areas, in particular the less developed areas. We suggest that consideration be given to the establishment of Regional Education Councils having accountability in as much as possible for all education in each of the regions.

There are many difficulties associated with this concept but we feel that it deserves examination, even if the Regional Education Council's role is only advisory for a start. We are strongly in favour of having the existing Vocational Education Committees absorbed into a new structure. For instance, the whole Dublin region could be considered as one region and a reorganised version of the present Vocational Education Committees could be the nucleus of a new Regional Education Council for the region.

To get the discussion underway we are offering the following outline of a possible structure.

Each Regional Council should consist of people representing industry, trade unions, professional groups, higher education, nominated members of existing Vocational Education Committees, agriculture, ecclesiastical authorities, teachers, senior students, local authorities, Minister's nominees, etc. Each Council should have an Executive Bureau appointed by the Council from amongst its members, on which the

Principal of the Regional Technical College would have a place and also the Regional Educational Director, who would be Director of Services to the Council. The Regional Education Councils should have elected Chairmen. The fact that the Principal of the Regional College would be a permanent member of the Executive Bureau reflects the importance we attach to his position in the region.

The Council would be mainly accountable for the preparation of plans and budgets for each aspect of education in the region and the detailed preparation work would be carried out by the Regional Education Director in conjunction with the Executive of the Council. The planning process should start at the level of each college and school and work up to a final consolidated plan for the region.

There is some question as to whether the Regional Education Director should be a member of the Department of Education or an independent officer employed by the Regional Education Council. If he were to be an officer of the Department of Education, one possibility would be to have him reporting to an Assistant Secretary for Regional Education. In this way, one could foresee meetings between all the Regional Education Directors and the Assistant Secretary concerned to discuss the allocation of resources. Of course, each Regional Education Director would live in his own region.

Another possibility would be that under some other organisational arrangement as mentioned in the earlier part of this section, the Regional Education Directors could report to a regional education sub-commission of a permanent Commission on Education. This sub-commission could consist of Regional Education Council Chairmen and the Regional Directors. Appendix VII shows in outline form how we see this organisation.

Since it is hoped that the Regional Technical College project will be getting under way as fast as possible through the operations of the Consortium, the other design architects and the Building Development Unit recommended later in this report, attention is drawn to the fact that the local Chief Executive Officers would be members of the recommended Regional Education Council. It would be highly desirable to involve these men in the planning for each Regional Technical College immediately, and even if some variant of

this recommendation is adopted it should be clear that they will have an important part to play and, in view of their representation on the Executive Bureau of the Regional Education Councils, will share the accountability for the Regional Technical Colleges.

Each Regional Technical College should have a Principal, Vice-Principal and Heads of Departments. The Principal should have a Managing College Council. The Council should be representative of teachers, past pupils, interested trade organisations, professional organisations, etc.—there are many examples to be consulted in Britain. The usual advisory committees for each type of education would also be needed. The College Council should have a number of ex-officio representatives from the Regional Education Council. Since we attach so much importance to the status of the Principal, consideration might be given to calling him the President of the Regional Technical College.

10. ACCOMMODATION NEEDS

(1) ACCOMMODATION IN THE COLLEGES

By associating projected target populations of students attending each particular course in each centre with the outline curriculum proposed for it, a synthesis of teaching accommodation required in each College was made, and schedules of classrooms, laboratories and workshops were drawn up. To these were added ancillary accommodation (stores, preparation rooms, maintenance workshops, etc.) as well as administrative, communal and physical education facilities.

Accommodation details were set out in Part II of the preliminary brief report. They are summarised in Appendix IV of this report. The details given were intended as an approximate indication of requirements as seen by the Committee at the time when the Preliminary Brief Report was prepared in January last, providing a suitable basis for detailed discussion with Department staff. Since then we have made further reviews in consultation with Department officials and revised schedules of accommodation are being prepared. It is now considered to be a matter for the Department (through the Building Project Unit recommended in

this report) to work out final details of accommodation and to extend our more general brief to include room layouts, equipment details, etc., for the guidance of the professional design teams.

The Regional Colleges should set new and ambitious standards for technical education in Ireland and should be equipped accordingly. We are, therefore, concerned that the most modern teaching aids should be installed, including closed-circuit and local broadcasting television facilities, visual aids, workshops, programmed learning equipment, class monitoring consoles, etc.

We attach particular importance to our recommendations in the Preliminary Brief Report that in addition to the normal requirements of offices for Heads and Assistant Heads of teaching departments, suitable working facilities outside the classroom should be provided for all teachers. We have in mind the provision of well-proportioned departmental staff rooms with individual working facilities.

We have not provided specific accommodation to meet the needs of An Chomhairle Oilúna, since these cannot yet be determined. Their requirements may be satisfied by provisions which are being made for other courses; they may, alternatively, require separate facilities. We, therefore, recommend that An Chomhairle should be consulted with a view to making due provision for facilities they may require on the College sites.

In passing, we should mention that we have studied the recommendations on accommodation standards in Further Education Colleges in Britain given in the most recent draft revision of Building Bulletin No. 5 of the Department of Education and Science. Those of us who visited London in February took the opportunity to consult with the members of the working group responsible for these recommendations and to compare our summary of accommodation for the Regional Colleges under the various subheads with current practice in comparable Colleges in Britain.

(2) RESIDENTIAL REQUIREMENTS

The normal residence of many students in Regional Colleges will be too far away for daily commuting, so that a considerable amount of extra residential accommodation will have to be found in the regional centres. This can be done by

providing hostels at the Colleges or elsewhere, by using local boarding-house facilities or by a combination of both methods. Having given this matter careful thought we decided to recommend that the decision be left to local education and other community interests, but that space should be provided on the College sites for residential accommodation on the basis that about half the student population at capacity level (excluding Leaving Certificate students) would require it.

11. GROWTH AND FLEXIBILITY

Having regard to the interdependence of technological know-how and economic growth we consider it essential that provision should be made for a variety of courses in the Regional Colleges corresponding in order of magnitude with the levels of demand which have been indicated (Appendix III). We expect a continuing increase in the participation rates in senior cycle second-level courses not only because of vocational school pupils staying on for whole-time Leaving Certificate studies but also because more pupils will transfer from secondary schools to pursue the technical Leaving Certificate courses available at the Regional Colleges. The trend in demand for technical education may be gauged from the 12% annual increase in whole-time attendance at technical schools which occurred between 1959/1960 and 1964/65 and by the 18% increase in apprentices attending courses in technical schools over the same period. These increases were restricted to some extent by constraints in the supply of places and might have been greater otherwise. On the other hand, the effect of the inauguration and the activities of An Cheard Chomhairle in co-operation with the technical education authorities may have stimulated the participation of apprentices in school courses to an unprecedentedly high degree. In any event over the past thirteen years the average annual rate of growth of these courses has been 10% in each case. The future activities of An Chomhairle Oiliúna in promoting and developing technical training over a wide range of industrial and other occupations and the consequent demands for technical education which may be generated thereby are likely to at least maintain current rates of growth.

The requirements indicated by CERT for the hotel and

catering industry are a further example of major demand pressures which may be felt from many quarters in coming years.

We thought it unwise to attempt to project student population figures too far ahead. We therefore decided to give detailed figures, as far as present information permitted, for 1972 and an overall estimate of growth by 1975. We assumed that the Colleges would open in 1969 and that the first complete cycle of courses would end in 1972, at which point a review of trends and future requirements would take place. This would presumably be followed by further planning and design and a second phase of building to meet the needs of the latter half of the next decade. If, therefore, the first phase provided sufficient accommodation to 1975, additional buildings should be ready for occupation by then to meet further growth in demand from that time onwards.

We foresee a recurrent pattern of development in the provision for technical education in the long term, with successive phases of review, planning and construction over a cycle of about five years.

The student population forecasts in Appendix III are compared with estimated "optimum student capacity" figures in Appendix IV. These figures are obtained by assuming that each teaching room provides, on average, 20 places. Accommodation schedules were derived from the assumption that each room should be occupied for not more than 75% of day working hours in the College. It is important to bear in mind that these are planning indicators and do not necessarily suggest targets for the maximum use of the Colleges. For example, as we outline later, it will be necessary in many cases to promote important classes which will be small in size. The figures indicate that Cork and Limerick will reach the 75% occupancy level well before 1975 and will be approaching the 90% mark at that time. Elsewhere there are more reasonable margins in capacity. It appears from the comparison that there will be sufficient need for technical education facilities by 1975 to justify the provision of accommodation on the scale envisaged by us in the first phase of construction.

Considerable uncertainty must remain in regard to both the forecasts of numbers and the mix of students in each College, i.e. the relative proportions taking courses at different levels and in various specialisations. We, therefore, emphasise

again the necessity for a flexible building design, in terms of both ease of extension and internal adaptability to changing educational and technological requirements.

12. COST AND TIME

(1) TIME CONSTRAINTS

September, 1969, has been set as the target date for the provision of facilities in the Regional Colleges for Leaving Certificate courses. Heavy demands for additional apprentice courses and for the improvement of existing provisions are already being made. We have discussed with the Consortium the implications of this situation for the project as a whole. It is clear that the objectives cannot be met unless detailed planning can proceed without further delay.

It occurred to us, however, that although it had been announced that eight Colleges would be built, nothing has been said about the building schedule. The implications of phasing the construction programme, whether within any College or as between one College and another, were discussed with the Consortium. Clearly the work will extend over three to four years in the smaller Colleges and up to five years in Cork. The Department should now establish clear priorities right through the construction period and make further detailed analysis of the consequent accommodation needs at each stage based on the data developed by the Committee for their overall studies of student population and accommodation requirements.

A phased programme in each College based on further analysis of this kind should help to ensure a reasonable rate of capital expenditure, and allow opportunities for review of our present concept of requirements in the Colleges and for some consequent changes in accommodation and facilities should they be thought desirable.

(2) ANALYSIS OF COSTS

Unit costs estimated by the Consortium were used to prepare certain cost estimates shown in Appendix V. It is emphasised that they are very approximate in nature and are intended only to give a reasonable indication of the orders of magnitude of costs involved and to provide a rough basis

of comparison between certain alternative courses of action in regard to the planning of the Colleges.

We gave careful consideration to the capital and running costs resulting from various alternatives in regard to the allocation of courses to Regional Colleges. It had already been agreed by the members that Leaving Certificate and advanced senior cycle courses should be provided in all Colleges. Those in Group (i) and (ii)—see Page 25—seemed to have priority, for reasons already outlined in the provision of facilities for apprentice and technician courses. The remaining five Colleges in Group (iii), however, were considered for purposes of this analysis to be variable in the scope of their activities in that some or all of their student population at apprentice and technician levels could be transferred either whole-time or on block-release to one of the four Colleges in Cork, Limerick, Waterford and Galway, or to Dublin (depending on the speciality concerned in any particular case), where similar courses would be available.

It appeared from the target projections (Appendix III) and from the schedules of accommodation derived from them that there would be sufficient spare capacity in the early years in the larger Colleges, due to (a) fairly low load factors in special purpose workshops and laboratories, (b) small initial class sizes, so that those transferred from the Group (iii) Colleges could be fairly readily absorbed with very little additional capital cost and even in the case of some technician courses without any significant increase in running costs.

The Group (iii) Colleges would in these circumstances provide mainly Leaving Certificate and advanced senior cycle courses, with a small amount of apprentice instruction limited by whatever spare capacity there would be in teaching rooms, provided primarily for senior cycle pupils. There would, of course, be considerable scope for part-time evening courses, but essentially the Colleges would be catering for local demand, except in the advanced senior cycle year. Colleges confining their activities in this manner were termed Local Technical Colleges (LTC) and a comparative analysis of capital and running costs was made in Appendix V.

An attempt was made (Appendix VI) to determine the total equivalent annual cost differentials which would arise from designating the five Group (iii) Colleges sequentially as Local Technical Colleges. It will be seen that where all five

Colleges are limited to LTC functions an estimated annual cost reduction of £381,000 results, as compared with providing full Regional Colleges facilities in all of them as well as in the other four Colleges of Groups (i) and (ii).

We then considered whether an annual saving of this order of magnitude would outweigh the benefits to the regions concerned of having Regional Colleges provided within them.

We saw the following as being the principal benefits :

- (1) the output of qualified technicians and other technical personnel from each College should have a positive influence on the development of productive enterprise in the Region;
- (2) the existence of specialist teaching staff in the regional centre should aid regional development;
- (3) the availability of adult education will contribute to the upgrading of the educational level and technical skill of the existing work force;
- (4) an increasing awareness should be generated on the part of local industry of the role and value of technical education, e.g. through college advisory committees, consultative services, library information services to industry;
- (5) the availability of high level technical education should encourage people of ability to settle in the area and offer attraction to foreign investment.

Our view was that the benefits to each of the eight Regions associated with the Colleges already designated would be sufficient to justify giving full Regional College status to all of them. We also reconsidered the proposal for a ninth College in Letterkenny in the light of further studies made in recent months and were of the opinion that the range of courses appropriate to a Regional College need not be fully provided there in the first phase of development. We therefore agreed to recommend that a Local Technical College should be built at Letterkenny to provide mainly for Leaving Certificate and advanced senior cycle courses, together with the limited amount of apprentice training scheduled in our projections for that centre. The site for the College should, however, be large enough to accommodate expansion to full Regional Technical College status at a later stage of development.

13. RECOMMENDATIONS

(1) Having regard to the considerations given in this report and the urgent need for the Consortium and other design architects concerned to progress the project through working drawing stages, the Steering Committee recommends that the Minister proceed with all eight Regional Technical Colleges, including the CERT-amplified Galway Regional Technical College, as soon as possible. The Colleges should be designed around the information given in the Preliminary Brief Report modified by further studies being made by the Committee with the Department.

(2) Should there be any question of deferring part of the project, then the Committee recommends that Cork, Limerick, Waterford and the CERT-amplified Galway Colleges should have priority and should proceed without delay, because they together with the Dublin Colleges will account for about three-quarters of the student population in technical education in 1972.

(3) A Local Technical College catering for the requirements outlined in the preceding Section should be provided in Letterkenny with a site area large enough to accommodate expansion to full Regional College status.

(4) The Limerick Regional College project should proceed now, independently of other projects which may be considered by the Government as a result of the recommendations of the Commission on Higher Education. Should it be decided to provide another third-level institution there, the Committee would favour the concept of an educational complex on one site at Limerick with the fullest possible inter-disciplinary co-operation in the use of accommodation and facilities by both institutions.

(5) The Galway Regional College should be designated as the main centre for hotel and catering courses outside Dublin, and provision should be made there for a stock of 600 students. The other Colleges outside Dublin should provide essentially for local day-release courses, and the facilities of other institutions providing preparatory courses should be used as fully as possible.

(6) The Department, in consultation with the professional design teams, should study the feasibility of phasing the

construction programme at each College so that the accommodation provided at the end of each stage corresponds as closely as possible with estimated demand for places at that time.

(7) There is an urgent need for a Department of Education team to expand the more general brief prepared by the Committee. Room layouts, laboratory fittings, workshop details, industrial unit layouts, etc., must be prepared for the guidance of the Consortium. It is recommended that the idea of a Project Co-ordinator which was introduced in the preliminary brief should be expanded to embrace the following proposals:

A Building Project Unit should be established to be accountable for all school and college building work for the Department and should be staffed by

- Head of the BPU (the project co-ordinator previously mentioned).
- One officer of the Department to be responsible for accommodation and educational facilities.
- One officer of the Department to specialise in Cost Control.

As stated in the preliminary brief the Head of BPU should be a professional man with experience as an educationalist if possible. The BPU should have the power to call on other specialist help within the Department as it may be required.

(8) Supervisory staff should be recruited at least one year before the opening of each College so that they could engage in organisation of their College and recruitment of teachers. Other new teachers should be appointed up to six months in advance and given pedagogic training, teaching practice and opportunities for adaptation of their technical knowledge for teaching purposes.

(9) Regional Education Councils should be set up having accountability, in as much as it would be possible, for all education in each of the Regions, being duly representative of the interests referred to in Section 9. Executive responsibility should be given to an Executive Bureau, with a Regional Education Director who would be responsible for all the services to the Council. Regional Councils would report to a central authority, either in the Department of Education or in a Sub-Commission for Regional Education.

(10) Each Regional College should have a Principal, Vice-Principal and Heads of Departments. There should be a managing College Council, representative of the various appropriate interests, with ex-officio representatives of the Regional Education Council.

(11) The Minister should explore the possibility of inviting an outside consultancy or research organisation to conduct some feasibility surveys which would evaluate in terms of cost and time the implications of providing forecasts of demand for (a) places in the Regional Colleges and (b) the products of the Colleges.

(12) The Government should establish a National Council for Educational awards, with the functions indicated in Section 3.

NOEL W. MULCAHY
(Chairman)

JOHN F. MARTIN

THOMAS E. DUNPHY

JOHN P. O'DONNELL

CHARLES McCARTHY

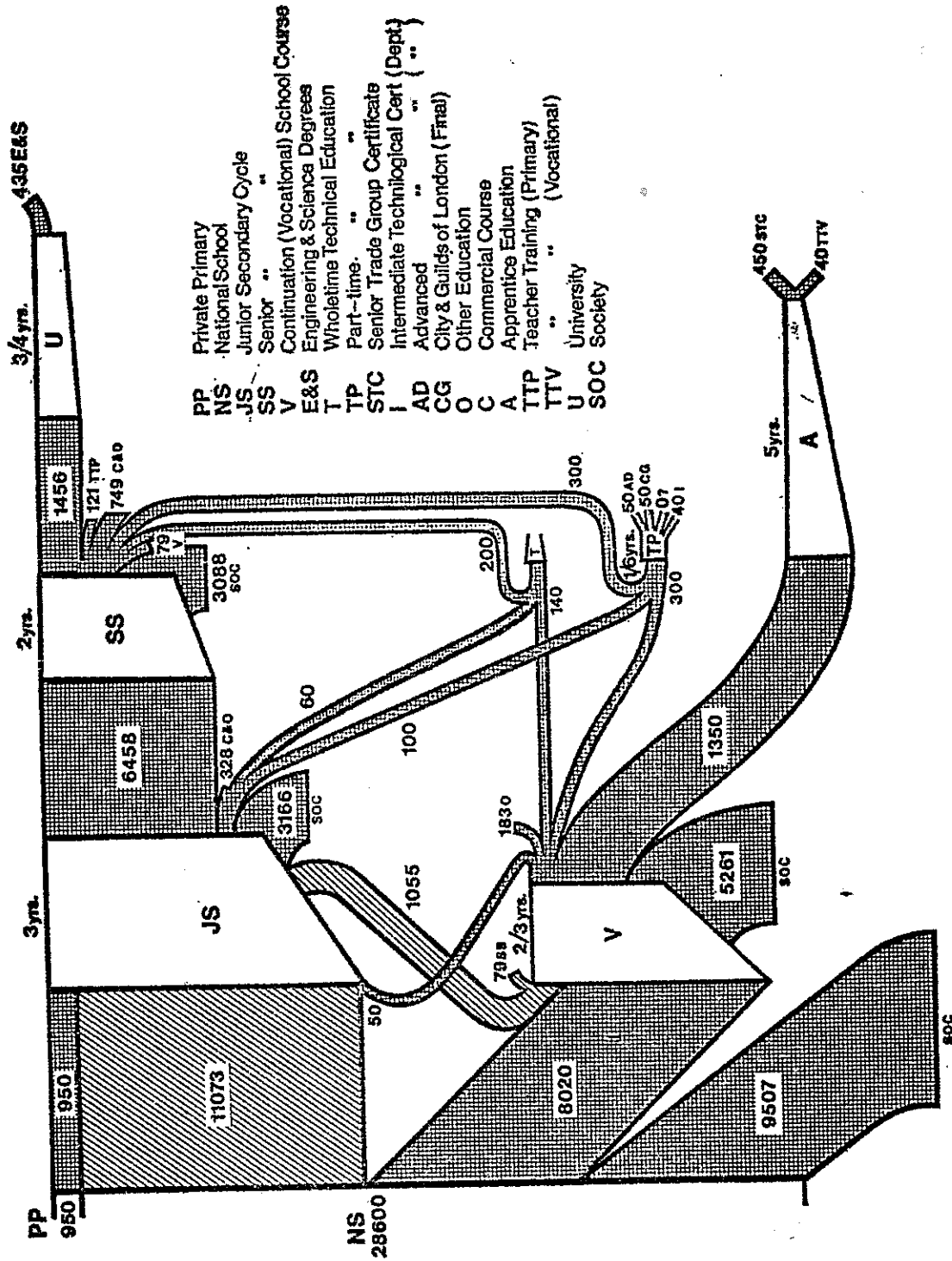
PAUL QUIGLEY

EDWARD McDERMOTT

JOSEPH ROWAN

JEREMIAH P. SHEEHAN
(Secretary)

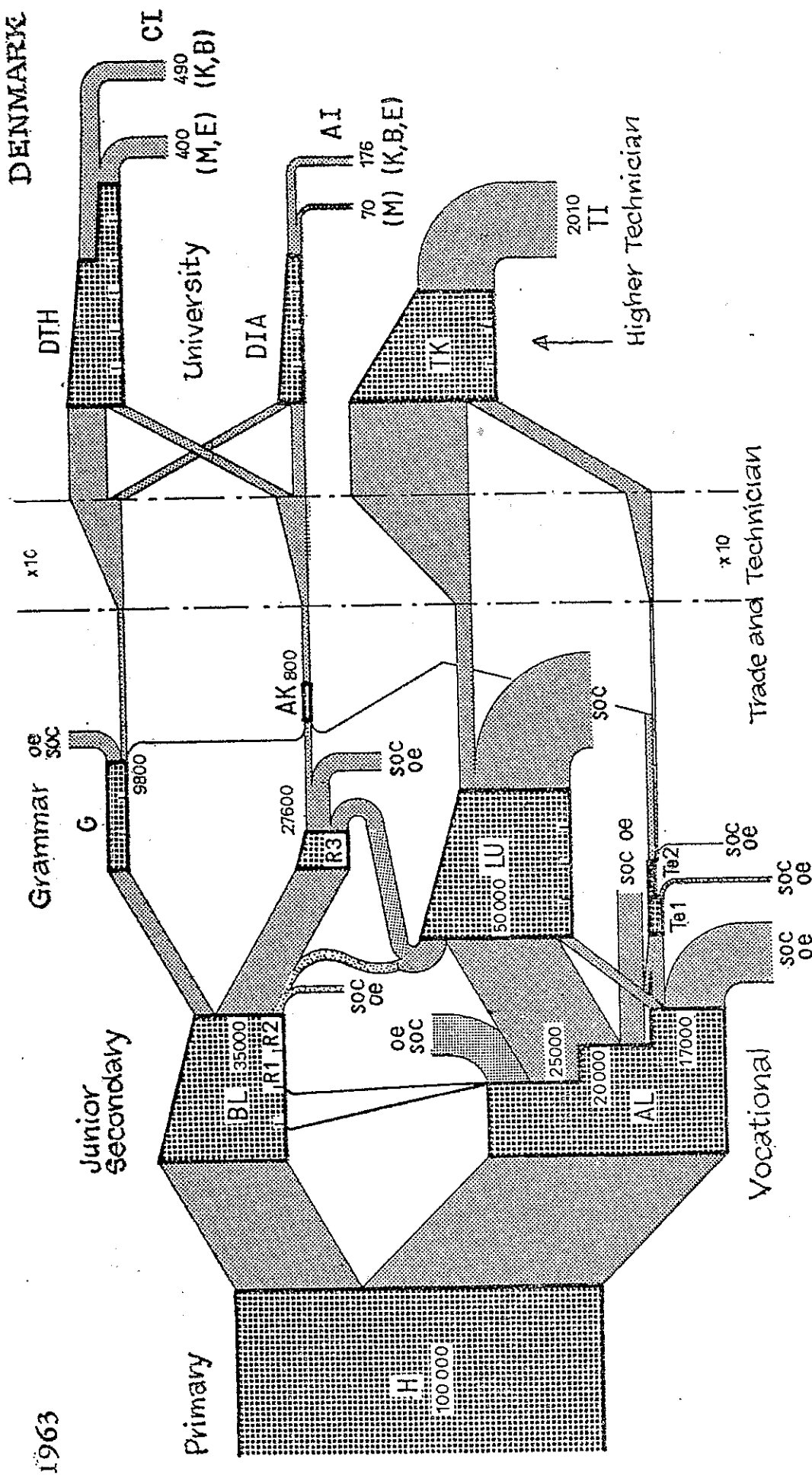
April, 1967.



Appendix Ia—Educational Sector flow pattern 1963 : Boys.

(Based on Table 6.25 Investment in Education.)

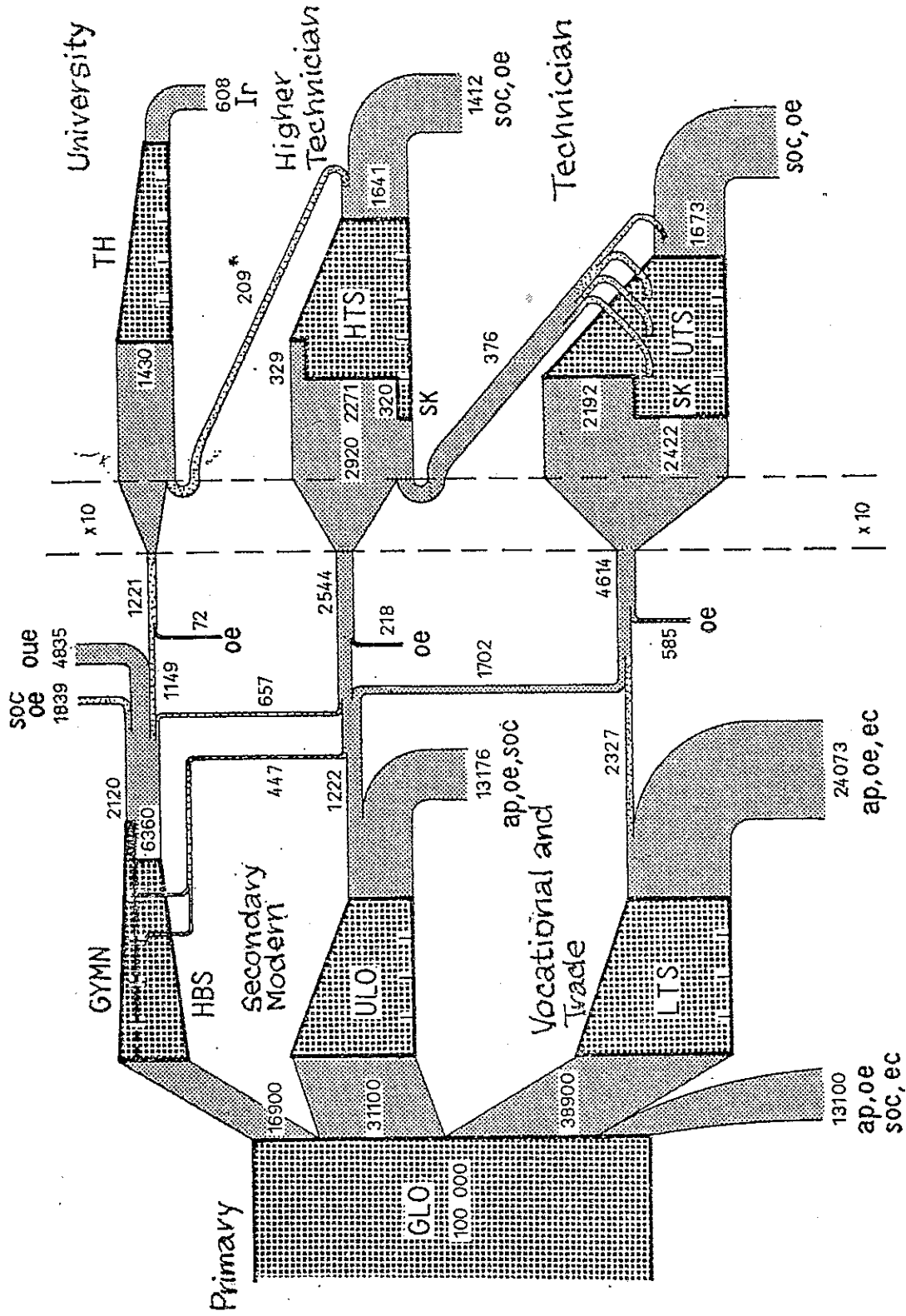
DENMARK



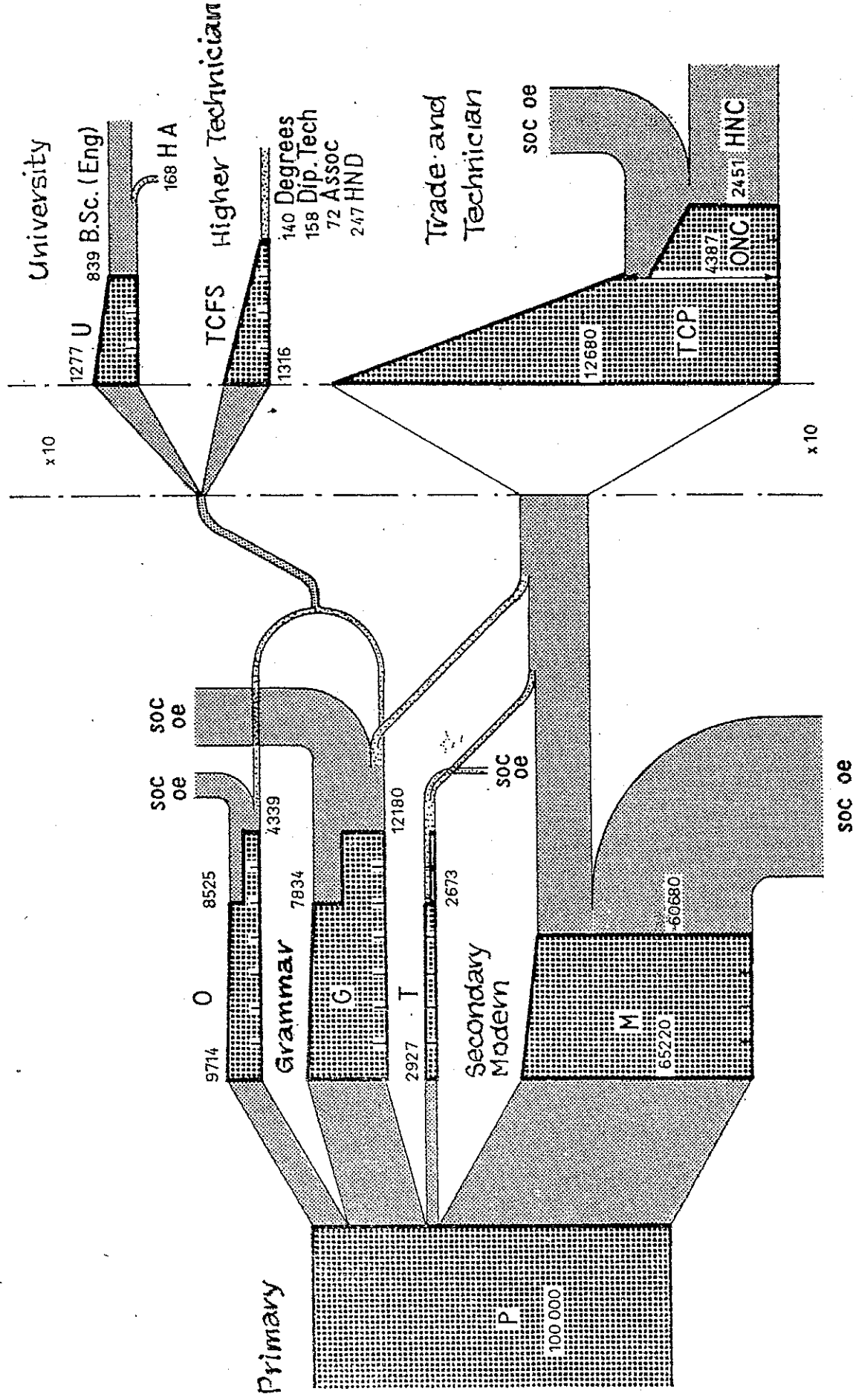
1963

THE NETHERLANDS

1962



1962

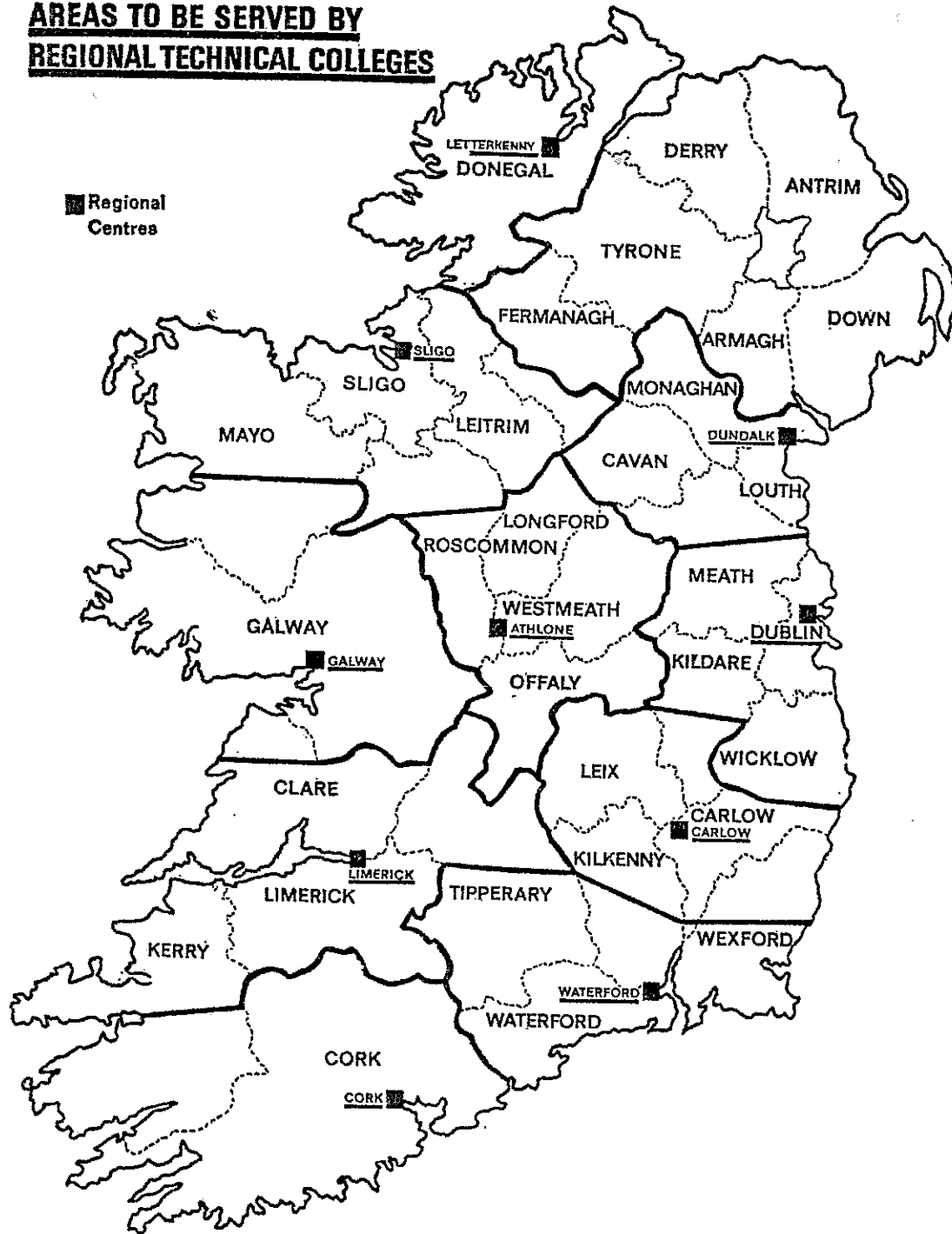


Appendix Ib—Educational Sector flow patterns in certain European countries 1962/63.

(Taken from OECD/EUSEC Report on the Education and Training of Professional Engineers, Volume 1, Revised 1964, by kind permission of EUSEC.)

Appendix II.

AREAS TO BE SERVED BY REGIONAL TECHNICAL COLLEGES



(Based on the Ordnance Survey with the permission of the Government—Licence No. 1180)

Appendix III—Student population in Regional Technical Colleges, 1972. Summary of target projections.

CENTRE	Course	Senior Cycle		Advanced Senior Cycle	Craft Apprentices	Distributive Trade Apprentices	Hotel and Catering	Technicians	Higher Technicians	Professional	Total 1972*	Total 1975*
		15 mts.	30 mts.									
Dublin	O	490	800	160	885	240	600	425	190	80	3,380	4,870
	S	980	1,600	160	1,770	320	600	740	760	480	6,430	8,307
Cork	O	140	240	80	280	105	95	245	130	20	1,195	1,550
	S	280	480	80	565	140	95	430	520	120	2,430	3,160
Limerick	O	100	230	80	240	75	95	175	55	10	950	1,230
	S	200	460	80	480	100	95	310	220	60	1,805	2,330
Waterford	O	60	130	50	70	50	95	65			460	590
	S	120	260	50	140	70	95	110			725	920
Galway	C	60	110	50	75	35	600	80			950	1,250
	S	120	225	50	150	50	600	140			1,215	1,585
Dundalk	O	60	120	50	75	45	55	50			395	510
	S	120	240	50	150	60	55	90			645	820
Sligo	O	50	120	40	35	45	55	50			345	440
	S	100	240	40	70	60	55	90			555	700
Athlone	O	60	125	40	50	35	55	40			345	440
	S	120	255	40	100	50	55	70			570	720
Carlow	O	80	130	50	70	45	55	60			410	525
	S	160	260	50	140	60	55	105			660	840
Donegal (Letterkenny)	O	55	110	40	20	20	—	70			260	330
	S	110	210	40	45	30	—	120			435	545
TOTAL	O	1,155	2,115	640	1,800	700	1,705	1,260	375	110	8,605	11,735
	S	2,310	4,230	640	3,600	940	1,705	2,200	1,500	660	15,485	19,930
For output (O) Multiply stock (S) by		0.5		1.00	0.5	0.75	1.0	0.57	0.25	0.16		

Stock=Number of students in attendance at any one time.
Multiplier takes account of (a) duration of course, (b) dropout, (c) block release arrangements where applicable.
* Assuming 30 mile radius for Senior Cycle (Leaving Certificate) pupils.

Output=Number of students completing the final stage of the course during the year.

Appendix IV—Analysis of accommodation in Regional Colleges (000's sq. ft.)

Centre Accommodation	Cork	Limerick	Galway	Carlow	Sligo	Athlone	Waterford	Dundalk	Donegal
Teaching (including Physical Education)	161.0	125.8	101.4	66.8	49.5	55.1	65.5	63.7	32.6
General Admin.	2.4	2.4	2.8	1.9	1.5	1.5	1.9	1.9	1.5
Dept. Admin. & Staff Workrooms	6.0	5.1	5.1	3.3	2.2	2.7	3.4	3.3	1.9
Communal areas	22.4	18.1	17.7	12.3	10.7	11.1	12.1	12.0	9.5
Stores and services	12.1	8.6	8.3	5.7	3.0	4.0	5.5	5.5	2.9
Sub-total	203.9	160.0	135.3	90.0	66.9	74.4	88.4	86.4	48.4
Balance Area (add 30%)	61.2	48.0	40.6	27.0	20.1	22.3	26.5	25.9	14.5
TOTAL	265.1	208.0	175.9	117.0	87.0	96.7	114.9	112.3	62.9
No. of Teaching Rooms	168	126	106	72	53	58	67	68	36
Optimum student capacity	3,360	2,520	2,120	1,440	1,060	1,160	1,340	1,360	720
Target Projections Stock 1972	2,430	1,805	1,215	660	555	570	725	645	435
Target Projections Stock 1975	3,160	2,330	1,585	840	700	720	920	820	545
Area per Student Place (sq. ft.)	79.0	82.5	83.0	81.2	81.2	83.3	85.8	82.7	87.2

NOTES
 (1) Certain small rooms such as syndicate rooms for group discussion in management courses, and research laboratories are not counted as teaching rooms in the totals given above.
 (2) Optimum student capacity in each College is based on a mean class size of 20 students.

Appendix V—Estimated capital and running costs (£000).

CENTRE	Capital Cost		Annual Running Cost		REMARKS
	R.T.C.	L.T.C.	R.T.C.	L.T.C.	
Cork	1,870		404		L.T.C. status not envisaged here.
Limerick	1,468		300		do.
Waterford	811		120		do.
Galway	1,242		202		do.
Sligo	615	187	92	40	
Athlone	683	187	94	40	
Carlow	827	187	110	40	
Dundalk	795	187	108	40	
Donegal	444	187	72	40	

BASIS OF ESTIMATES

- (1) Capital cost of R.T.C.'s taken as £5.65 per square foot (consortium estimate) plus 25% for equipment costs.
- (2) L.T.C.'s provide senior cycle two-year courses for Leaving Certificate plus one year advanced senior cycle courses on a whole-time and part-time basis together with a small element of apprentice instruction, to meet local demand only, which can be accommodated by using spare capacity in teaching accommodation provided primarily for senior cycle courses.
- (3) Capital cost of L.T.C.'s taken as £5 per square foot plus 25% for equipment costs.
- (4) Annual running costs are based on a mean teacher/pupil ratio of 1/15, with an allowance of 25% extra teaching cost for evening instruction. It is also assumed (a) that mean annual salary per teacher is £1,500 (R.T.C.) and £1,250 (L.T.C.), (b) that salary costs comprise 75% of total running costs, exclusive of debt service.

Appendix VI—Estimated cost differentials in certain Colleges (£000).

Centre	(1) Capital differential	(2) Cumulative capital differential	(3) Equivalent annual charges	Running Cost Differential		(6) Cumulative compensated differential	(7) Total (3) + (6)
				(4) Apparent	(5) Compensated		
Donegal	257	257	21	32	25	25	46
Athlone	496	753	60	54	40	65	125
Sligo	428	1,181	95	52	40	105	200
Carlow	640	1,821	146	70	47	152	298
Dundalk	608	2,429	194	68	35	187	381

NOTES

(1) Capital differential is the difference in capital cost between building R.T.C. and L.T.C. at the centre specified.

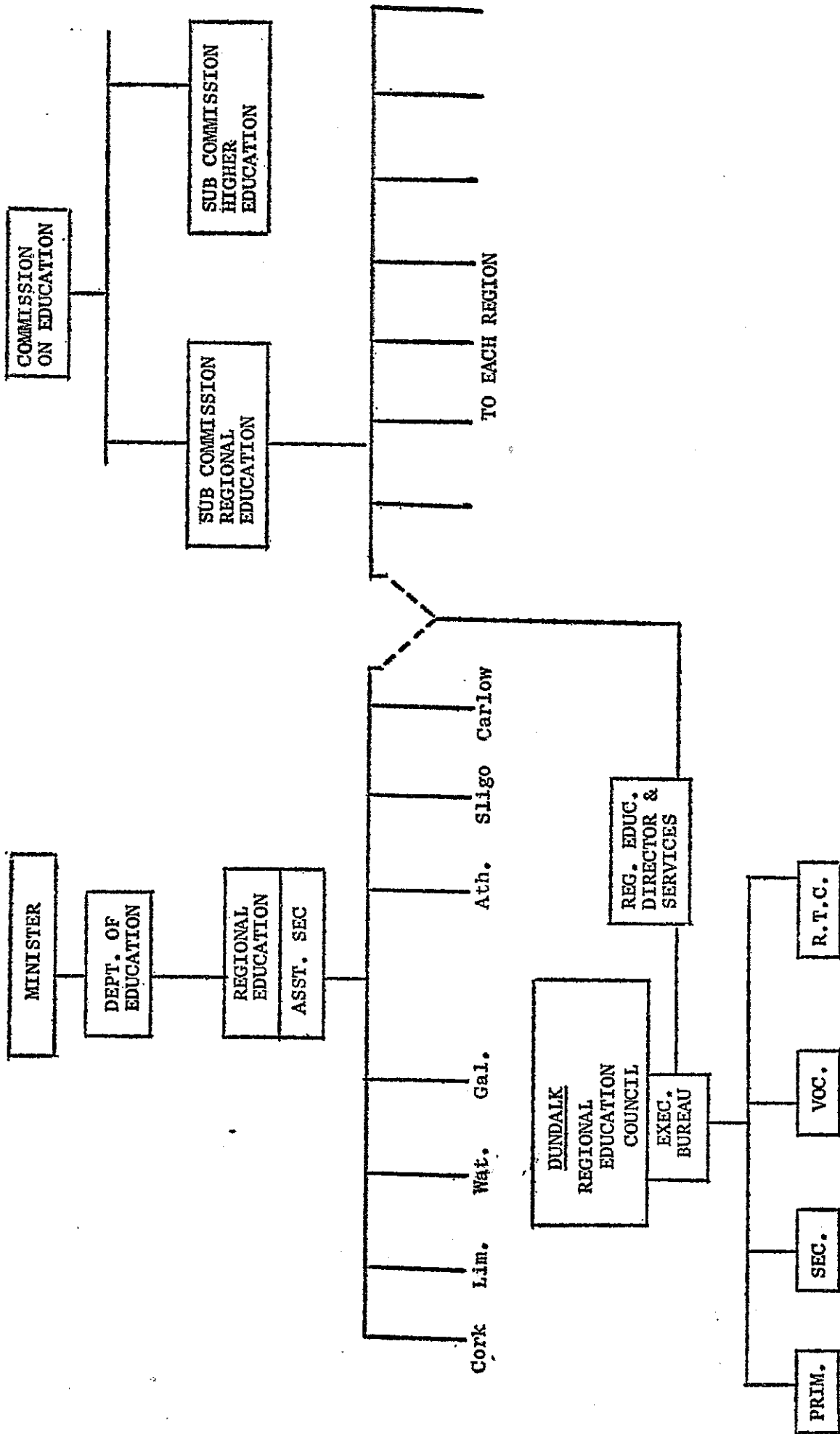
(2) Equivalent annual charges are based on 25 year repayment at about 6 per cent loan interest.

(3) Running costs differentials in column (4) are "apparent" values because the transfer of some students (mainly apprentices) to other centres involves additional running costs at these centres. Other transfers (mainly technician course students) do not, because low student numbers per class group in other centres permit their absorption without extra teaching costs.

(4) "Compensated" running cost differentials are the net savings after taking account of factors mentioned in (3).

(5) Column (7) shows the equivalent annual total saving on a cumulative basis as a result of successive changes in designation from R.T.C. to L.T.C. status in each centre. Thus if all five Colleges were given L.T.C. status an estimated £381,000 would be saved annually.

(6) The Colleges are listed in what is regarded as inverse order of priority.



Appendix VII—Alternative Organisation Structures.