

Symposium on Investment in Education

Contribution by PATRICK F. G. CANNON

(Held on 25th March, 1966)

This is, as far as I know, the second talk on the Irish educational system that has been given in the society. May I express my appreciation to the council for the invitation to participate in it, and may I avail of this opportunity of recommending Irish education, both North and South, as a particularly relevant and fruitful field for the future discussions of the society.

The recent publication of *Investment in Education*, prepared under joint Irish and O.E.C.D. auspices, has been an event of major importance in Irish education. I wish to offer my sincere congratulations to the members of the survey team on the scope and excellence of their report which is to be the main topic of our discussion. I hope I may be forgiven if I refer briefly to two short reports of much more modest scope confined almost totally to Irish post-primary education, prepared from public sources and without official assistance by a small committee of headmasters of lay secondary schools in 1962 and 1963, and express a certain satisfaction on behalf of that committee that making allowances for slight differences in methodology, availability of later enrolment figures and costings to the survey team, and of official assistance, the findings of these earlier reports have been substantially confirmed in regard to costings of post-primary pupils, participation, geographical inequalities in educational opportunity, and indeed in practically all the other major topics dealt with in them.

The members of the survey team would, I feel sure, be amongst the first to acknowledge how necessary it is that there should be a full and open discussion of their report in all its aspects by all the interests concerned, if it is to be fruitful for the future of Irish education. They would, I feel sure, endorse with myself the belief of Macaulay "that men are never so likely to settle a question rightly as when they discuss it freely". The volume and complexity of the literature on the general topic of "Investment in Education" is increasing so astronomically almost every day, that it would be quite impossible to discuss it adequately in the time at our disposal tonight. I propose, therefore, with the proviso that nothing I may say is to be interpreted as in any way detracting from my appreciation of the excellence of the report already expressed, to confine my remarks almost totally to the material and scope of the recent report.

There is a danger that our discussion may be slightly handicapped by the fact that the second volume of the report is not as yet available to the public, but in Irish education "half a loaf is certainly better than no

bread". It is, however, possible that some of my remarks may hinge on apparent omissions which may subsequently be supplied in the second volume, and which would, therefore, completely invalidate my criticisms. I have done what I could by careful reading of the Table of Contents of Volume II supplied in Volume I, to eliminate such a possibility. Under the circumstances, it is obviously impossible to eliminate a certain risk of error in this regard.

I note with regret that there are only two short references to education in Northern Ireland in the report. Up to 1922, both North and South had practically identical systems of education administered from Dublin for almost a century. The separate development in Northern Ireland in the last 40 years would, I believe, have been well worth some consideration. Educational problems are very similar in the two territories.

A unique opportunity seems to have existed for a comparative study which I regret was not availed of. Our Northern friends have made much progress in the educational field, and possibly even a few mistakes. From their experience, we may have much to learn. The terms of reference of the study group do not seem to have excluded the inclusion of a study of educational development in Northern Ireland, and an excellent precedent of many years' standing existed for its inclusion in the practice of the Central Statistics Office in including annually Northern Ireland statistics in the Statistical Abstract. It may be of value therefore to refer briefly later in this discussion to certain aspects of educational development in Northern Ireland.

PRIMARY EDUCATION

One of the most significant facts emerging from the report is the degree of retardation that seems to exist in pupils in primary schools. This aspect of our educational system would seem to demand very much further study and research. The problem is obviously an exceedingly complex one, and there would seem to be a very large number of variables involved. The degree of existing retardation clearly has very considerable effect on (a) the age at which pupils enter post-primary education, (b) the drop-out rate and the motivation to remain in post-primary education, (c) the age at which the pupils who remain on at school complete post-primary education. An attempt is made below to examine some of its possible effects on advancement in the post-primary system.

There is a significant difference in the financing of primary education as between classification and capitation schools about which the report is silent. In classification schools all teachers are paid personal salary by the State. In capitation schools annual capitation grants, based on the average attendance of pupils, are paid by the State to the conductors of the schools. As significant differences appear both as to size of school and pupil-teacher ratio as between these two types of schools, as well as between schools examined on a denominational basis, the material set out in Table 1 may be of interest and value.

TABLE 1

ENROLMENTS AND STAFFING:
CAPITATION AND CLASSIFICATION NATIONAL SCHOOLS (JUNE 1961)

	Capitation schools	Classification schools			Total all National schools
	Convent or monastery schools	Convent or monastery schools	Catholic schools, all lay staff	Non-Catholic schools	
Number of schools ...	445	166	3,807	446	4,804
Number of pupils ...	164,329	37,720	287,776	12,234	502,059
Average enrolment ...	369	228	75	25	103
As percent of total enrolment ...	32.7	7.5	57.4	2.5	100
Number of teachers ...	3,662	9,966		602	14,218
Pupil-teacher ratio ...	44.2	31.6		20	35.3

The controversy regarding the relative educational merits of small and large schools had, I think, best be left to others. The data provided by the survey team regarding relations between the award of post-primary scholarships and size of school should not have undue weight attached to them without a very careful examination of all the variables involved. Many of the larger capitation schools have secondary schools attached to them, often on the same campus. Entry to the secondary side may, in some cases, depend on prior attendance at the primary section. Under these circumstances, a certain amount of selection may operate unofficially for entry to the primary section. The linkage of primary and secondary school may, under certain circumstances, prove an attraction to the parents of brighter children, or to the parents most interested in post-primary education. Certain primary schools may, for these and similar reasons, draw pupils of over-average ability from considerable distances and from areas well outside the immediate vicinity of the school. This is mentioned as just one of the variables which may require to be taken into consideration in any thorough assessment of the data given in the report.

COMPARATIVE STATISTICS

I note with regret the virtual absence of comparative statistics from the Report. Comparative educational statistics are a hazardous undertaking at all times, and it need not alarm us unduly that the survey team seems to have slipped into one of the many pit-falls that lie in wait for the unwary traveller in that domain.

The defects in presentation arise mainly from the selection of different years, and from failure to give the relative census months, and show the

dangers arising from failure to select identical years from the units being compared in an era of rapid change. I have been unable to check the figures on data given for Norway or France, but an examination of the table as regards England and Wales and Scotland suggests that it is now possible to make considerable improvement in presentation by using contemporaneous statistics. The original table (with omission of figures for Norway and France and addition of census dates) and an amended table, which includes data not necessarily available to the survey team at the time of compilation, are given below.

ORIGINAL TABLE 1.5 ("Investment in Education", page 20)

PERCENTAGE PARTICIPATION IN FULL-TIME EDUCATION
COMPARATIVE STATISTICS

Country	Date	Age 13	Age 14	Age 15	Age 16
England and Wales	1st January, 1962	% 100.0	% 100.0	% 42.2	% 22.4
Ireland	1st February, 1964	94.6	66.4	51.5	36.8
Northern Ireland ...	1st January, 1964	94.8	92.4	39.3	22.7
Scotland	1st January, 1963	99.8	99.3	35.3	20.4

SOURCE: "Investment in Education". S.O., Dublin.

TABLE 2 (Suggested amendment of above Table)

Figures adjusted to 1964—date of Irish Census above

PERCENTAGE PARTICIPATION IN FULL-TIME EDUCATION
COMPARATIVE STATISTICS

Country	Date	Age 13	Age 14	Age 15	Age 16
England and Wales...	1st January, 1964	% 100.0	% 100.0	% 58.9	% 24.9
Ireland	1st February, 1964	94.6	66.4	51.5	36.8
Northern Ireland ...	1st January, 1964	94.8	92.4	39.3	22.7
Scotland	1st January, 1964	99.8	99.3	41.9	22.2

Adjustment of figures for difference in census dates between 31st December and 1st February is likely to bring down figures for Irish participation for comparative purposes at 14, 15 and 16 by approximately 1 per cent. A qualitative assessment of the comparative figures might demand some consideration of evidence of retardation in the Junior cycle of secondary at 15 and 16 years as contributing an explanation of our comparatively high participation at these ages as against Great Britain and Northern Ireland. The fact that cohorts in education in Great Britain and Northern Ireland are tending to increase at a much faster rate than in ours might also be weighed in an assessment of these figures. The remarkable jump of 16.7 per cent in participation at 15 years from

1962 to 1964 in England and Wales as well as the fact that Great Britain and Northern Ireland are planning to raise the compulsory school-leaving age to 16 years by 1970, should, I think, reduce any feeling of undue complacency on our part with regard to these figures.

TABLE 3
PUPILS' JUNIOR AND SENIOR CYCLES AGED 15,
NORTHERN IRELAND AND IRELAND, 1964

Pupils at 15 years	Total	Junior Cycle	% Junior Cycle	Senior Cycle	% Senior Cycle
<i>Northern Ireland</i> January, 1964 Grammar schools ...	5,185	640	12.5	4,545	87.5
<i>Ireland</i> February, 1964 ...	19,472	17,432	89.5	2,040	10.5

Table 3 shows the distribution as between junior and senior secondary in Ireland, and junior and senior secondary grammar in Northern Ireland at 15 years. If we are entitled to assume some degree of equality between standards of achievement at secondary Junior Certificate in Northern Ireland and the Intermediate Certificate here, the figures of this table might possibly be regarded as indicating some slight degree of retardation amongst our 15-year-old pupils. Possible explanations of this are, (a) the higher age of entry to our secondary system, (b) existing retardation in primary school level already indicated by the survey team.

The fact that 13 per cent of G.C.E. candidates in England and Wales are under 16 years and that a further 48.8 per cent are under 17 years on the 1st September in the year in which they take the examination might also be taken into consideration. It may be of interest to take a look at some comparative figures for the percentages of age-groups remaining in primary schools at ages 12-16 in these islands. In the case of England and Wales, Scotland and Northern Ireland, it may be assumed that the balance of the age-group not in primary school is in a secondary school.

TABLE 4
COMPARATIVE PERCENTAGES OF PUPILS REMAINING IN PRIMARY
SCHOOLS IN EACH AGE GROUP 12-16

Country	Date	Age 12	Age 13	Age 14	Age 15	Age 16
England and Wales ...	1st January, 1964	2.1	1.8	1.3	0.0	0.0
Ireland† ...	1st February, 1964	*85.0	54.8	10.4	1.6	0.2
Northern Ireland ...	1st January, 1964	12.9	12.3	11.0	1.1	0.0
Scotland ...	1st January, 1964	21.8	0.47	0.0	0.0	0.0

* Estimated.

† Pupils in secondary tops of primary schools excluded.

EXPANSION OF POST-PRIMARY EDUCATION

Our real problem seems to be that if we are to keep in step educationally with most other countries in Europe, post-primary education must be universalized, and made freely available to all our children. This is the pattern that has already emerged throughout Europe and has been evident for almost 20 years in the educational systems of our nearest neighbours.

One important problem in the provision of universal secondary or post-primary education is whether there are to be two separate systems provided for the abler and for the less able children. Twenty years ago, education practice in many countries favoured segregation based on ability. Sometimes, as perhaps in Great Britain and Northern Ireland, the choice was made on grounds of economy and economic necessity, rather than on purely educational grounds. More recent educational opinion tends to oppose such separation for educational, social and even economic reasons, and steps are now being taken towards a more comprehensive system. In less densely populated countries such as Ireland, there are almost certainly quite sound economic grounds against such separation and the duplication of facilities which it necessarily involves.

The effects of socio-economic background on participation in post-primary education have already been well established in most other European countries, and have been quite adequately demonstrated for Ireland by the findings of the survey team.

The general debate about the provision of absolute equality of educational opportunity which of necessity involves many complex variables is likely to go on for a long-time. There is possibly no ideal solution likely to emerge in the near future, but meanwhile practical steps have been taken throughout Europe to achieve the major objectives involved.

European plans generally are—

- (a) to raise the school-leaving age to 16 where it has not already been done;
- (b) to make post-primary education universally available and “free” (“free” meaning that post-primary education will no longer involve direct payment of fees by parents);
- (c) to encourage greater participation amongst certain socio-economic groups by maintenance grants for pupils where necessary, especially in the later years of post-primary education when these pupils are most likely to drop out;
- (d) to prolong the period of general post-primary education and to postpone vocational choice. There is almost universal condemnation both by educationalists and by economists of premature direction of secondary education towards narrow vocational aims, and a much wider realization that any adequate technical or technological training must in the present age be based soundly on a sound general education in the humanities, and particularly on an adequate foundation in mathematics;
- (e) to take account of the fact that the education of the more academically gifted children has in the past been too often stunted by the

complete absence of a training in handwork, and that handwork has a most useful part to play in the development of all pupils, if it is introduced into the curriculum on a general basis rather than on a narrowly vocational one.

Against this background, we might have a look at our existing post-primary system. There were in October, 1965, 98,560 pupils in voluntary secondary schools with approximately 8,000 secondary pupils in secondary tops of primary schools—a total of 106,560 secondary pupils. In February, 1964, there were approximately 30,000 full-time pupils enrolled in vocational schools. In evaluating these figures, it is important to keep in mind that average attendance in vocational schools may fall to as low as 76 per cent of the enrolment. The corresponding figure for primary schools is 88 per cent, and it might be assumed that average attendance at secondary schools is at least as high as at primary. The preponderance of full-time secondary enrolments over full-time vocational enrolments is often obscured in the public mind. The confusion seems to be due, at least partly, to the comparatively high enrolments in part-time evening courses. There would seem to be a strong case for a clearer division for the purpose of statistical presentation between full-time vocational and part-time vocational education. Most of part-time evening enrolments might more fittingly be classified for statistical purposes as “Further Education”, as is the practice in Great Britain and Northern Ireland. From the forecasts made by the survey team, it seems probable that enrolments in the two systems will continue to follow much the same pattern for the immediate future.

In any consideration of future investment, and plans for expansion, it would seem necessary that this should be borne in mind. Parent attitudes in choice of post-primary school should be taken into consideration. In this regard, it may be valuable to examine the present tenure of post-primary scholarships. These scholarships are tenable at parents' choice at either secondary or vocational schools. The present tenure may be taken as a reasonably clear indication of parent preferences, made under relatively free conditions. It may be useful to keep in mind that at least 75 per cent of these scholarships are subject to a means test, and are reserved for the children of parents in the medium or lower income groups.

Table 5 shows the tenure of all post-primary scholarships in 1962. It is understood that “other schools” referred to in the table are almost exclusively secondary tops in primary schools, so that out of a total of 3,764 only 25 of these post-primary scholarships are held at parents' choice in vocational schools. This pattern of choice has been consistent over the last 20 years.

It seems clear that parents of scholarship holders have their minds quite firmly made up as between the two systems. There are a very considerable number of possible explanations for the preponderance of parent choice shown. It might have been helpful if the survey team had attempted an

TABLE 5

POST-PRIMARY SCHOLARSHIPS TENABLE IN SECONDARY, VOCATIONAL
AND OTHER APPROVED SCHOOLS AWARDED BY COUNTY OR COUNTY
BOROUGH COUNCILS

Particulars of Tenure 1962-63

Council	Held at Secondary schools	Held at other approved schools	Held at Vocational schools
Co. Clare	131	—	1
Cork City	155	5	3
Co. Donegal	69	—	5
Co. Dublin	233	14	1
Dublin City	828	5	11
Co. Kilkenny	127	7	1
Co. Laois	83	2	1
Co. Sligo	78	—	1
Co. Wexford	60	1	1
All other Counties ...	2,000	47	—
Total	3,764	81	25

SOURCE: Report of Department of Education, 1962-63. Stationery Office, Dublin.

objective examination of the reasons underlying this choice. Amongst possible explanations may be listed—

- (1) Historical background, and the fact that secondary schools are generally longer established, and vocational schools a comparatively new growth.
- (2) Preference of parents, which does not seem out of line with European experience, for the more liberal, general or grammar school education up to at least 15 or 16 years as against the more narrowly vocational type whose curriculum has in the past lacked some of the essential liberal elements. Advocates who have criticised such parental preference, and with a view to changing the pattern, have quite wrongly, I consider, equated preference in this matter with “bias”, “prejudice”, or sometimes “snobbery”.
- (3) The fact that for one reason or another, the vocational system has come to be regarded in the public mind as a system catering for children of lesser ability.
- (4) The comparatively low level of achievement in mathematical and scientific subjects in these schools.
- (5) The fact that up to the present it was virtually impossible for a pupil to proceed through the vocational system to university or even to higher technological education.
- (6) The fact that in spite of the most eloquent advocacy on behalf of the vocational system and in favour of greater enrolments therein on the part of politicians, administrators and teachers in the vocational system, rarely

are the children of these advocates found in vocational schools, and that it is thereby evident to parents that in the minds of these advocates the vocational schools are only too obviously schools "for other people's children".

(7) The attitude reflected in the Limerick regional survey, which seems to have been the only sociological investigation into parents' choice of schools, which makes it clear that parental choice amongst farm labourers in County Limerick overwhelmingly favoured the secondary as against the vocational school.

(8) The fact that the claims made by the advocates of the vocational education system are not always totally borne out by the facts. One of the strongest claims has been that the vocational system is strong on project work, on independent work by the pupils, on new approaches to teaching. At the Young Scientists' Exhibition, held in January, 1965, open to all children between the ages of 12 and 18, there were approximately 200 entries. Only one of these entries was from a vocational school. Practically all the others came from secondary schools. At the Young Scientists' Exhibition in January, 1966, there were a total of approximately 300 entries. Approximately four or five came from vocational schools, and practically all the others from secondary schools.

(9) Choice of the type of post-primary school naturally may be influenced very considerably by the advice and guidance given to primary leavers by their schools and teachers. The fact, as is evident from Table 1, that many primary schools have attached to them on the same campus and under the same management a secondary school, may have a considerable influence on choice of post-primary school. There is no evidence to suggest that such guidance and advice is given other than *bona fide*, and in the interest of the pupils concerned.

(10) The present type of management by a Vocational Committee or the constitution of existing committees may not be the one most acceptable to parents, or the one likely to result in the creation of local interest in and the building up of public confidence in the vocational system.

(11) There seems at least a possibility that the present type of management may slightly inhibit the initiative and authority of headmasters, and for this reason have an adverse effect on the running of the school.

(12) The present methods of appointment of teachers in these schools are often far from satisfactory either to many of the teachers or to the public.

It seems unfortunate that Table 10.18 of the Report seems to have taken no account of average attendance, and grouped all vocational schools with a full-time enrolment of under 100 pupils together. This grouping tends to obscure the size and magnitude of the possible problems likely to arise on grounds of smallness of size. Table 6, based on Vocational full-time enrolments for the year 1961-62, may help to illustrate the problems of size. Slight differences in numbers and size of school and total enrolments are probably attributable to difference of years, and to the inclusion of technological pupils in Table 6.

TABLE 6

DAY VOCATIONAL SCHOOLS BY ENROLMENT, ATTENDANCE, SIZE,
1961-62*Full-time Pupils only*

Size of school	No. of schools	No. of Class-rooms	Enrolments of full-time pupils	Average attendance of full-time pupils	Average enrolments of full-time pupils per school	Average attendance of full-time pupils per school
0-24	19	37	347	228	18	12
24-49	30	83	1,220	848	41	28
50-99	86	375	6,551	4,858	76	57
100-149	44	283	5,377	4,000	122	91
150-199	28	205	4,778	3,602	171	129
200-299	26	392	6,075	3,773	234	184
300 and over	6	72	1,919	1,559	320	260
*300 and over Special schools	7	189	3,820	2,600	545	371

SOURCE: Based on Answer to Parliamentary Question: Dail Reports, 3rd December, 1963.

* All classified as Colleges of Technology, 3 are in Cork, 2 in Dublin, 2 in Limerick.

A casual examination reveals that many of the smaller vocational schools are two-roomed buildings, which in itself is almost a complete negation of the function implied in the name, "vocational", as this type of education, if it is to be adequate and comprehensive under Irish conditions would seem to demand at the very least 5-6 "special purpose" rooms in addition to the usual chalk and blackboard classrooms.

The comparatively large number of small vocational schools suggests that policy considerations regarding size of primary, or secondary schools on economic, educational or curriculum grounds, apply equally to the smaller type of vocational school. When it is considered that vocational schools in most areas are not segregated by sex, as are the great majority of secondary schools, and that fees charged to pupils are so small as to be almost negligible, the smallness of size is all the more remarkable. When it is considered that many of these schools have been built in the last 20 years, it might appear that many of them have been sited without any real planning, and without much regard for population figures in their areas.

There would seem a strong case for the consideration of some alternative strategies in relation to the future of these schools, particularly in view of the exceptionally high pupil costings for even continuation pupils ranging from an average of £71 per pupil in the counties to £84 in Dublin City.

QUALITY OF TEACHING AND SUPPLY OF TEACHERS

The quality of the teaching given in any educational system, and the calibre of the teachers, are of much greater importance than the mere physical investment in buildings and equipment, and it seems unfortunate that the survey team were not able to assess the present position, and to consider possible improvements. The quality of teaching may perhaps be assessed more easily in mathematics than in any other subject, and indeed it might almost be assumed that the quality of mathematics teaching is a fair indicator of the quality of teaching in other subjects. In this regard, it might be well to note that between three and four pupils in Northern Ireland and England and Wales reach Advanced Level standard in mathematics per 10,000 of the 17-18 age-group, for every one who attains Leaving Certificate Honours in mathematics here. An investigation made some years ago into the standard of academic qualifications of graduate teachers of mathematics in secondary grammar schools in England and Wales, and mathematics teachers in secondary schools in Ireland, gave the results shown below.

TABLE 7

Graduate Mathematics Teachers Grammar Schools: England and Wales, 1963					Mathematics Teachers Secondary Schools: Ireland, 1963				
	Men and Women	Men	Women	% of Total		Men and Women	Men	Women	% of Total
1st cl. hons.	437	315	122	12.1	1st cl. hons.	11	8	3	1.6
2nd cl. hons.	1,214	769	445	33.7	2nd cl. hons.	23	21	2	3.4
Other Maths degrees	1,954	1,204	750	54.2	Maths and other degrees	646	311	335	95.0
Total	3,605	2,288	1,317	100	Total	680	340	340	100

SOURCE: Register of Intermediate School Teachers. Stationery Office, Dublin, "Statistics of Education", Part I. H.M.S.I., London, 1962.

The investigation seems to show clearly a considerable deficiency of 1st and 2nd honours mathematics graduates in our secondary schools. It seems that it should be more generally recognised that mathematical teaching in the higher forms of secondary school, and in the first years of university are a continuum, requiring teachers of approximately the same calibre at each level.

There seems very little prospect of improvement in the position with regard to the supply of mathematics teachers with 1st or 2nd honours degrees in the immediate future. A survey conducted in 1964 revealed that out of 202 Irish graduates with 1st or 2nd honours in mathematics in the years 1948–1963, only 13 entered secondary teaching. Approximately eight of these were in religion, and the remainder lay. There seems little doubt that the disparities existing in mathematical standards at secondary school leaving mentioned above are largely due to differences in the quality of the mathematical teaching.

In recent years, a number of refresher courses for teachers of mathematics have been organised, and have proved useful as a short-term remedy for the situation. As an adequate long-term remedy, there would seem to be no real solution unless immediate steps are taken to make it possible for graduates with 1st or 2nd class honours degrees in mathematics to consider secondary teaching as a permanent career in Ireland.

Table 8 shows the number of 1st and 2nd honours degrees in mathematics 1948–63. The higher productivity evident in Belfast is possibly a reflection of the quality of teaching of mathematics in the secondary schools in Northern Ireland.

The fact that secondary teachers' salary scales in Ireland seem to ignore basic managerial principles in failing to provide incentives for posts of responsibility, and make no provision for the encouragement of post-graduate work, either before entering teaching or during a teaching career, would seem to have contributed greatly to the present scarcity in the supply of specialist teachers, as evidenced in the supply of mathematics teachers. Another serious feature is that Irish graduates of high calibre at present teaching in Great Britain are virtually condemned to exile from their own country by the present failure to recognize their teaching service in Britain.

The quality of mathematics teaching has been selected merely as an indicator and it may be assumed that the supply of specialist teachers in science, modern languages and indeed in many other subjects of the curriculum, is an equally difficult and urgent problem, calling for an immediate remedy. In discussion of "Investment in Education", it is too often forgotten that the time of the pupil in the years 12–18 is one of the most valuable resources, and it is essential that it be used to full advantage by the provision of the best possible teaching and guidance.

TABLE 8

HONOURS GRADUATES IN MATHEMATICS, 1948-63
 NATIONAL UNIVERSITY OF IRELAND AND TRINITY COLLEGE, DUBLIN

	1st	2nd	Total
University College, Dublin	24	18	42
University College, Maynooth	8	12	20
University College, Cork	34	22	56
University College, Galway	28	26	54
Trinity College, Dublin†	19	11	30
Total	113	89	202
Total number of above entering secondary teaching in Ireland	13		

QUEEN'S UNIVERSITY, BELFAST

	1st	2nd	Total
Queen's College, Belfast	51	100	151
Total	51	100	151
Total number of above entering secondary teaching in Northern Ireland	*60		

* Estimated.

† A number of these graduates may have received their secondary education in Northern Ireland.

SOURCE: Calendars of N.U.I., 1948-63, and figures supplied by Trinity College, Dublin, and Queen's University, Belfast.

NOTE: In 1961 the output of mathematics honours graduates from British universities (including the Scottish universities) was around 700. Approximately 600 of these had 1st or 2nd class honours, and approximately 100 3rd class honours. about half of these honours graduates go into industry, about 7 per cent go into university teaching, and the remaining 43 per cent go into secondary school teaching, mainly into grammar schools. (Source: "The Supply and Training of Teachers of Mathematics"—a report prepared by the Mathematical Association, London, 1963.)

CONCLUSION

There are a few matters which the report might usefully have dealt with which should perhaps be mentioned.

1. The function of the Inspectorate, the importance of its work, particularly in post-primary education, and the importance of a quasi-judicial independence in relation to the Department of Education, as is the long-established tradition in Great Britain, seem worthy of examination. It seems open to question whether the increase in the number of inspectors

in post-primary education has been sufficient to meet either the requirements of greatly increased enrolments, or the increase in the complexity of their work. "Secondary Education: A Report of the Advisory Council in Education in Scotland, 1946", contains a useful chapter on the Inspectorate. Many of the findings would be completely relevant to the Inspectorate in Irish Education.

2. The establishment, on the lines of the library in the Ministry of Education in London, of an educational research library properly staffed within the Department of Education whose services would be made available to educationalists as well as to officials, would certainly have seemed well worth consideration. The ever increasing volume of world literature on education would seem to make some such provision almost imperative.

3. The report of our Department of Education contained until some 20 years ago a table showing clearly the subsidy by way of capitation and salary grant to each individual secondary school and giving the number of pupils, and full-time and part-time teachers in each school. The data available in it threw useful light on the pattern and financing of the secondary schools. The table seems to have disappeared silently.

The Report of the Department of Education in Northern Ireland continues to include this table in its original form, and its re-introduction in the annual report of our Department of Education might usefully have been considered, as some of the facts contained in it seem necessary to adequate future planning.

4. It seems a pity that the Report did not include the population data of pupil potential within each approximate catchment area for the new comprehensive schools on which the selection of the sites was presumably based. These figures might well seem to have been entitled to precedence in the statistical field over forecasts of enrolments or costings for these schools. In view of our rather unfortunate history in regard to the comparatively recent planning in vocational field, their inclusion might have convinced many that there would be improvement in future planning.

APPENDICES

The Appendices 1-3 are included with a view to giving a general picture of the provision of post-primary education in Europe. The comparisons made, and the indicators used, should be treated cautiously as between individual countries but they may help to give an approximate idea of the extent of investment in education in other countries. All in all, they tend to show that our present provision for post-primary education cannot be regarded as totally adequate.

It has been possible to advert only to a few aspects of the subject, but I feel sure that many of the gaps will be filled by the other contributors. Important as the economic benefits of education may be, it should be stressed that they are incidentals rather than fundamentals, and that any system of education that loses sight of this essential distinction, is unlikely to prove fruitful in the long run, even in the strictly economic sense.

Newman's aim of a truly liberal education "To open the mind, to correct it, to refine it, to enable it to know, and to digest, master, rule and use its knowledge, to give it power over its own faculties, application, flexibility, method, critical exactness, sagacity, resource, address, eloquent expression", must also be kept clearly in the foreground of any education likely to be economically productive.

APPENDIX I

RATIOS OF PUPIL ENROLMENTS IN SECONDARY SCHOOLS (GENERAL, VOCATIONAL AND TEACHER TRAINING) RELATED TO THE AGE-GROUP 15-19 YEARS

Country	Length of Secondary studies (years)	Academic year beginning	Unadjusted Secondary enrolment ratios
Republic of Ireland	5	1960	45
England and Wales	7.8	1961	105
Scotland	4.6	1960	79
Northern Ireland	5	1961	112
Belgium	6	1960	116
Denmark	—	1960	72
France	7	1961	87
Finland	8	1960	95
Germany (Federal Republic of) ...	9	1961	77
Italy	8	1961	56
Japan	6	1961	104
Netherlands	5.6	1961	109
Norway	5	1961	78
Portugal	7	1961	30
Spain	6	1960	24
Sweden	—	1961	66
Switzerland	—	1959	68
U.S.A.	4.6	1961	80
U.S.S.R.	—	1960	39

NOTE: The unadjusted secondary enrolment ratio adopted by UNESCO is a percentage ratio based on the enrolment in all types of secondary school (general, vocation and teacher training) at this level related to the estimated population 15-19 years old. It should be borne in mind in interpreting this ratio, that the actual age ranges of the pupils enrolled in secondary schools do not correspond to the arbitrary age-group 15-19. Furthermore, the length of school at secondary level and in each type of secondary school varies widely from one country to another. It follows that the maximum value for any particular enrolment ratio may be either above or below 100. It should be emphasized that the ratios presented in this table are to be regarded as rough indication of the situation and development of the secondary enrolment for a given country, and should be treated cautiously in international comparisons. For further details of concept and its refinements, see source.

SOURCE: "World Survey of Education—IV, Higher Education". U.N.E.S.C.O., Paris, 1966.

APPENDIX II

PUBLIC RECURRING EXPENDITURE ON EDUCATION PER PUPIL
ENROLLED AT EACH LEVEL OF EDUCATION

Country	Academic Year beginning	Average Expenditure per Full-time Pupil		
		Primary	Secondary	University and Higher
Ireland ...	1961	£23	£38 (General) £71-£84 (Vocational)	£110 plus £8 (Student Aid)
England and Wales ...	1961	£59	£92 (Under 15) £161 (Over 15)	£540 plus £247 (Student Aid)
Scotland ...	1961	*£65	*£101 (Under 15) *£177 (Over 15)	£540 plus £247 (Student Aid)
Northern Ireland ...	1960	*£47	* £74 (Under 15) *£129 (Over 15)	£426 plus £268 (Student Aid)
Finland ...	1960	£71	£62†	£127
Japan ...	1961	£19	£25	£158
Netherlands...	1960	£33	£82	£256
New Zealand	1961	£33	£59	£210
Norway ...	1960	£65	£74	£433
Sweden ...	1960	£117	£187	£389

SOURCE: "World Survey of Education—IV, Higher Education". U.N.E.S.C.O., Paris, 1966.

* Estimated figure.

† The majority of Finnish secondary schools are privately owned, but are aided by the State. Tuition fees are charged at both State and private secondary schools.

APPENDIX III

TOTAL PUBLIC EXPENDITURE ON EDUCATION IN SELECTED COUNTRIES

Per Inhabitant and as a Percentage of Gross National Product

Country	Academic year beginning	Currency unit	Educational expenditure per inhabitant in units of National currency (1)	Gross National product per inhabitant in units of National currency (2)	Public educational expenditure as % of gross National product (3)	Public educational expenditure per inhabitant in sterling (4)
Republic of Ireland ...	1960	Pound	6.8	232	2.9	£ 6.8
England and Wales ...	1961	Pound	16			16.0
Scotland ...	1961	Pound	24	511	4.3	24.0
N. Ireland ...	1961	Pound	15			15.0
Belgium ...	1960	Franc	2,863	66,426	4.3	20.6
Denmark ...	1960	Krone	278	9,000	3.1	14.4
Finland ...	1960	Markka	17,165	322,737	5.3	18.9
France ...	1961	Franc	226	6,956	3.2	16.6
Germany (Fed. Rep. of)	1961	Deutsche Mark	170	5,745	3.0	15.2
Italy ...	1960	Lira	16,644	403,444	4.1	9.5
Japan ...	1961	Yen	9,702	182,137	5.3	9.7
Netherlands...	1960	Guilder	181	3,722	4.9	17.9
Norway ...	1960	Krone	375	8,881	4.2	18.8
Portugal ...	1960	Escudo	150	7,807	1.9	1.9
Spain ...	1960	Peseta	258	20,213	1.3	1.6
Sweden ...	1960	Krona	413	8,540	4.8	28.6
U.S.A. ...	1959	Dollar	139	2,714	5.1	49.8
U.S.S.R. ...	1961	New Ruble	42	720	5.8	16.6

SOURCE: "World Survey of Education—IV, Higher Education". U.N.E.S.C.O., Paris, 1966.

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Contribution by CHARLES McCARTHY

The great danger with this excellent report is that it will be regarded as an end rather than as a beginning. When the team was engaged in making projections for 1970, they had to do so on the basis of certain assumptions, which in turn were based on the plans for development which were available from the Department of Education at the time. But since the conclusion of the survey certain radical changes in educational policy have come to light. It is a tribute to the report that a new projection can be devised, but the point I must emphasise is that certain projections must, in fact, be revised before the ink is dry on the report. This I believe to be particularly so in the case of technical and vocational education.

Certainly, the raising of the school leaving age to 15 was anticipated; and the establishment of comprehensive schools. In addition the survey team was aware that the junior cycle of the vocational school would be extended from two years to three, and that a technical leaving certificate course of two years' duration would be established. At the present time, the age of entry to day vocational schools is 13+ and the team, on the basis of the information then available to them, had to assume that the year would be added at the end, bringing the students beyond the school leaving age. They also had to assume an examination after two years as at present at age 15. In those circumstances they naturally concluded that participation in the third year of the day junior course would be small enough. On this basis they estimated an increase in student numbers of approximately 8,000 by 1970. They recognized, of course, that there was

another alternative, that is, entry at 12+ not at 13+, and they said that if the age of entry were lowered, the pattern of enrolments could be greatly changed.

What has emerged since then? In the first place, we are now presented with the concept of a common intermediate certificate, and although the Department of Education has been rather coy about the age of entry, nevertheless everything now points to the age of 12+. This is reinforced by the Minister's desire to see the school leaving age coincide with a terminal examination; and if this must be the culmination of a three-year course, it is difficult to escape the logic of an entry age of 12+.

This, of course, is quite a different situation from one in which a year is added at the end. At the present time, with entry at 13+, there is a substantial falling off of attendance in the second year. If the year is added at the beginning of the course, therefore, and if the end of the course coincides with the school leaving age, the three years will tend to fall very substantially within the ages of compulsory schooling. My own estimate, on the basis of the figures provided by the Survey is that the 30,000 students in day junior vocational schools will increase to 44,000 rather than 38,000 by 1970.

There is another dimension to this. At the present time, the ratio of boys to girls in day vocational schools is two to one. The introduction of a common intermediate certificate and the opening up of an avenue to further education must result, I believe, in a proportionately larger participation by girls, larger certainly than would be represented by an overall percentage increase.

There is much in the Report as well which would lead one to believe that there will be a sharper increase in the numbers attending vocational schools than would be represented merely by a development of the present pattern.

The Survey makes it clear that further increases in participation would have to come largely from the lower income groups. Furthermore there is a marked tendency to require higher qualifications before entry into apprenticeship. In this we must follow two trends in Western Europe generally if we are to maintain a competitive position with regard to skills.

There is a third point which requires more explicit treatment than has been given to it up to now. In many of the European systems of education we can distinguish three streams, the academic, the *real* and the practical. The *real* stream, which as you know, was developed at the beginning of the nineteenth century, is based largely on mathematics, science and modern languages, and is a very popular stream for further commercial and technical education. In this country we seem to think largely in terms of an academic stream and a practical stream. The concept of a technical leaving certificate brings the *real* stream somewhat into focus for the first time, and although such a stream does exist embryonically, nevertheless it is not explicitly worked out as yet. Once an opportunity is given for its development, I believe that we will see it grow quite substantially. In any event, its place will almost certainly be largely within the present vocational education system.

All these factors appear to me in any event to mean that the vocational education system will be expected to contribute more, proportionately, than it does at present to the development of post-primary education.

Naturally the Report does not take these factors into account but they all serve to underline the fact that the projections in the Report for vocational and technical education are almost certainly too modest.

Let me move on now to the senior cycle of the technical stream. The Report, by reason of the assumptions it had to make, anticipates a two-year course to the leaving certificate. At the present time entry into professional courses of the colleges of technology requires more than the honours Leaving Certificate as a rule. Furthermore there is a strong tendency to require higher qualifications for entry into the universities. When we take into account as well the fact that the examination at the end of the junior cycle will probably be done a year earlier than the Report anticipated, it is not unreasonable to expect that the course leading to the technical leaving certificate will be a three-year course, not a two-year course.

Let me turn now to the question of teacher training. The Report does certainly anticipate a substantial increase in the numbers of teachers of mathematics and science, but apart from recognizing additional activity in these fields, the Report naturally assumes a continuation of the same spread of teaching specialities as exist at present.

I say "naturally" here because the Survey team had not available to them any information on projected syllabus changes. Since their Report was made, the Department of Education has settled, as a matter of policy, on a common intermediate certificate, and this implies substantial organizational changes in education and a substantial variation as well in the pattern of recruitment of teachers. The present teacher training procedures would need to be improved very much even to meet the demands of the current curricula; but very much more will clearly be required if we are to meet the requirements of the future.

Furthermore, there is a very large number of part-time teachers in the vocational and technical education system at the present time, many more than should really be there. The Report again had to assume that it was a matter of Department policy that such a large number of part-time teachers should be employed because of the inability of the system to get permanent wholetime teachers in sufficient numbers. Of course, some part-time teaching must always be a feature of this educational system, but certainly there should be no question of continuing our dependence to such a considerable extent on part-time teaching. The Report, however, accepted the present part-time teaching contribution as a norm and increased it proportionately with the increase in teachers generally. If, however, the intention is—and I hope it is—to substitute full-time teachers for part-time teachers where this is desirable, then a very substantial alteration in methods of recruitment of teachers must take place.

I think that the Report itself has done us a great service in underlining the remarkably close relationship between education and employment.

In the categories of workers who do not participate to any extent in post-primary education the unemployment figure is as high as 15 per cent as a national average, while among those who had an opportunity of participating adequately in post-primary education the unemployment figure is very low indeed.

Yet vocational and technical schools are operating at present at full capacity and even if all the current plans for development take place, the modest projections of the Report will hardly be met. One would imagine then that the Department of Education at the present time should be engaged in plans for a radical expansion of facilities in the whole post-primary field and particularly a radical expansion in facilities for technical and vocational education. Yet this year seems to show a contraction rather than a development in the provision of facilities on a national basis. Furthermore, my own feeling is that throughout the country generally there is an atmosphere in vocational education more of retrenchment than development. I do realise that people must pause before they launch out on major capital development but my fear is that we may be pausing too long and may in fact be overtaken by events. This has been very much our experience up to now. In a curious kafkaesque way, everybody but the person who makes the final decision seems to be aware that schools recently completed have always been planned on too modest a scale. To give a case in point, I was in a school recently which was completed two or three years ago. The accommodation in fact was based on enrolment experience in the early forties and everybody was aware that the five rooms planned would, in fact, be far too small. Nevertheless it was found impossible to get sanction to increase the size of the school. In the event the architect designed a very large headmaster's and teacher's room which, on the opening day was turned into a classroom. It seems to me that throughout the country at large there is a curious lack of conviction that all these projections—even the modest projection in the Report—will really come about. As far as I can judge people are much happier to look at the enrolment figures last year and this year and base their plans for five years ahead on these figures rather than on any projections with regard to the total school population.

This is why I do most enthusiastically subscribe to the recommendation in the Report that there should be a development unit within the Department of Education. I understand that certain steps have been taken by the Department of Education already to this end. However it is very important, I believe, that the full implications of this recommendation are understood and put into operation. The survey team clearly had in mind a highly-skilled professional unit whose recommendations would be made at a very high level in the administrative structure of the Department of Education. If this recommendation is watered down, I think the consequences could be very serious, because there is so much lack of awareness on the one hand of the urgency of our needs, and on the other hand there is so much continuing work to be done in revising projections in the light of new policy decisions. Indeed all that I have said to you tonight I have said in order to underline the importance of this recommendation of the Survey team.

Contribution by Dr. K. MILNE

This very valuable report must, like all documents, be read against the background that gave rise to it, and in particular the reader must bear in mind such important features of the Irish educational system as its denominational and managerial basis. One feels as if the survey team felt itself to be, if not actually walking in a potential mine field, at anyrate walking on eggs. One senses that the authors of the report—well aware of the dangers of outstepping their terms of reference, yet convinced of the urgent need that some of their findings be taken to heart took refuge in the oblique phrase and double negative!

After all, there is not a single sentence, so far as I can see, that criticises the one or two-teacher schools *per se*. There is simply the innocuous remark that “we raise the query whether the present distribution of schools is the most suitable, satisfactory or economical method of providing primary education” (9.83).

Again, on the subject of small secondary schools, it is stated that “if modern requirements should indicate a need for more flexibility in secondary education, such schools are likely to find themselves faced with difficulties of adaptation” (10.26).

The language question would, from a superficial glance, appear to be ignored, yet is it? What about this pregnant phrase: “Out of approximately 20 hours per week instruction in national schools ten hours are devoted to the vernacular languages of which about two-thirds are devoted to Irish and one-third to English” (16.12).

We in the Church of Ireland set up committees a couple of years ago to study both primary and secondary education. Their terms of reference were much wider than those set the O.E.C.D. team, and not surprisingly, their findings were more explicit. But what has been most encouraging for us (and I may say that the General Synod of the Church of Ireland has accepted the recommendations of its two Advisory Committees) is the fact that our views were largely borne out by those of the O.E.C.D. report. I shall say a word or two about the Church of Ireland reports, for while we, as a minority community, have our own special problems we have tried to tackle them within the context of the whole Irish educational system, not putting denominational considerations first but rather looking at our own schools and seeing what could be done to ensure that Church of Ireland children and indeed all Protestant children could be given an education that was on a par with the best education available to the majority.

Our Advisory Committee on primary schools recommended that the Church of Ireland should establish central schools wherever possible and the reasons given were these:

That out of approximately 450 Protestant primary schools the great majority have one teacher only, and that this teacher is expected to teach children ranging in age from four to 14, very often in an unsuitable and inconvenient building.

That a teacher is expected to be in charge of up to six classes at once.

That there are but few children in each age group which reduces to a minimum the social and educational advantages gained by class teaching.

That it is humanly speaking impossible for a single teacher to give of her best to all six classes and it would appear that it is the juniors that demand most attention at the expense of the seniors.

That the teacher's lot is not what it might be in a system of one-teacher or even two-teacher schools, where teachers lack the stimulus and comradeship of colleagues and where opportunities for promotion are negligible.

That there is real insecurity attaching to one-teacher schools which are exceptionally vulnerable to the effects of population changes, so that both church and state hesitate to invest public money in them when their futures are uncertain.

It is interesting to compare our reasons for coming down in favour of larger schools with those put forward by the report. For whereas we came to virtually the same conclusion, the O.E.C.D. team arrived via an examination of different "indicators" such as the record of small schools where scholarships are concerned, the rate of progress achieved by small as opposed to large schools, and their curricular differences.

I should add that having been accepted by the General Synod these recommendations were brought to the attention of the Department of Education and since then our Board of Education, the several Church of Ireland dioceses and the Department have been studying the matter. I may also add that of course over and above the reasons just quoted for "going central" is the very important one that if the large primary school is to become the norm in Ireland, then, given its advantages, it will never do for our norm to be exceptionally small schools. In fact, it would be a serious matter if the terms "one-teacher school" and "Protestant school" were to become synonymous. As it is we are unlikely to have many schools with more than three teachers and a five- or six-teacher school would be rare outside the city. We trust, however, that our relatively small classes combined with a reasonable number of classes per teacher will somewhat compensate for this.

Before leaving this issue of the central school there is one matter that I would like to touch upon. Some people see the development of central schools as the coup de grace for the local community and it was put to us that by transporting children out of their own villages we would be hastening the flight from the land. We do not accept this hypothesis and are prepared to counter it with another: that attendance at very small and poorly endowed schools, quite apart from the educational hazards involved, may well aggravate a spirit of discontent with the local situation and provide an incentive to leaving the area. Finally, there is an abuse (mentioned in our report on secondary education) which we found in certain areas where there were many very small schools and I quote:

"We cannot condemn too strongly the practice obtaining in certain regions whereby prospective secondary school pupils are encouraged

to remain at primary schools until 13 or 14 years of age in order to maintain the numbers at the primary school”.

Our Church of Ireland report on secondary education could be summarized in the following extract from its general findings:

“We are strongly of opinion that improved standards can be provided only through fewer and larger schools, with more specialized staff, with suitable buildings, with adequate equipment and with better facilities for both teachers and pupils. We therefore consider that there must be a substantial planned reduction in the number of schools”.

The O.E.C.D. report makes slightly heartening reading for us when it says that “Protestants as a whole appear to have a much higher rate of participation in secondary education than the rest of the population”. But participation is not enough. We must be certain that what they participate *in* is up to standard, and that is why, as a result of the Church of Ireland report, an invitation went out from our General Synod to the Presbyterians, Methodists and Quakers to join with us in a Secondary Education Commission, to tackle the problems of secondary education. Speaking as a member of this Commission I think it is fair to say that we have been greatly encouraged by the eagerness for change on the part of many of our schools and while much has to be done things are well under way.

One of our major problems, of course, is that whereas the schools of the majority are to all intents and purposes subsidized by the members of the religious orders, we have no comparable source of income. Not only do our teachers need their state salaries, but in most cases they are paid salaries by the schools that are well in excess of the statutory minimum. As a result Protestant secondary schools find that capital is hard to come by, for endowments are small. This, of course, applies to all lay schools but an interesting point that we have discovered is that (to the best of our knowledge) the only lay boarding schools in Ireland are ours.

Assuming that denominational secondary schools are with us for the foreseeable future, it will be readily understood that the minority has a special problem here. Our children, outside the larger urban districts, tend to be thinly distributed over wide areas. If, therefore, the government’s ambition to see every child obtaining an appropriate post-primary education is to be achieved, it would seem (given the denominational system) that special scholarship facilities will be needed if our children are to receive equitable treatment.

This might well be covered by the recommendation of the report (12.38) that the degree of financial assistance given to pupils would need to vary for several reasons, the distance they live from any given educational establishment being one factor. However, we have yet to hear the official comment on this proposal.

Our Commission hopes for a more economic use of resources by amalgamation into more viable units, but even then it will not be easy to offer all the amenities demanded by the twentieth century. We are

interested in the Minister's urgent request for a policy of pooling secondary and vocational resources, and we imagine that many of our schools will wish to pursue this idea. We are also hopeful that the development of vocational education and the introduction to these schools of the intermediate certificate examination will bring post-primary instruction within the reach of many of our children—indeed if raising the leaving age to 15 merely lengthens the term of primary schooling it may do more harm than good. We have yet to see just how we are going to fit into the comprehensive schools and are conscious of one problem in particular here: that their catchment area will need to be fairly extensive if a reasonable number of Protestant children is to be able to avail itself of them.

Finally, to glance at higher education in the light of investment in education. The authors were quite properly inhibited by the imminent appearance of the Report of the Commission on Higher Education, but one sentence sticks in my mind:

“Care will have to be taken to avoid the waste of scarce resources in having university staff teaching students who have satisfied only low entrance requirements, when, in fact, other young people who could satisfy higher entrance requirements may at present be denied admission to the universities because of their parents' lack of means to pay for them”.

This suggests to me a tightening up of matriculation standards and at the same time a shift from ability to pay to ability to benefit as the basis of selection for the universities. In other words, there is going to be much stiffer competition for university places, partly because it will seem a less utopian ambition for many young men and women, equipped with post-primary education, partly because the facilities to enable the less well-to-do to attend will considerably increase, and indeed partly because the state cannot afford the waste of talent that the present haphazard system creates.

If participation in university education at national level is to rise then it must certainly rise for Protestants too. But this will require the best possible primary and secondary education for our children and the three levels can in no circumstances be considered apart from each other. Indeed another form of higher education—teacher training—is intimately connected with the other levels for it is the secondary schools that produce our candidates for the training colleges and it is to the primary schools that these candidates will eventually go.

Future prospects for our community in higher education are not always clearly understood, very largely because of the artificial situation created by the ban which precludes some Roman Catholic students from entering Trinity. The competition for places there is not what it could be, thanks partly to the ban and partly to the preferential terms (both academic and financial) accorded by Trinity to Irish students who are in the main as things now stand Protestant. Because of this situation Protestant parents of reasonable means with reasonably intelligent children who have been well taught can be fairly sure of a university place for their boy or girl.

But the ban will surely go and then our children will, I am sure, have to face intense competition for university places.

I have adopted a rather sectional attitude in my paper, hoping that this is what was expected of me. (As I have often noted before, the majority shows an almost morbid interest in the affairs of the minority!) But I would like to end with a more general consideration.

Many people express fears at the invasion of the educational field by the economists, but unless I am very much mistaken it is not generally the educationalists who are sounding the alarm. I think we know, and all teachers know, that the economics of education badly need investigation, and we need the economists to tell us—not what to do but how to do it, and surely that is what “Investment in Education” has done.

One of the great problems of financing education is the fact that changes in the population of school age *anticipate* changes in the population of working age. This means that while our education bill goes up, by raising the school leaving age, for example, the wages to pay the bill won't be available until these very children are earning them!

The two ways of meeting this situation, commonplace to economists, are (a) for the present working population to redouble its efforts and by greater productivity to earn more, and (b) for the most economic use possible to be made of such resources as we have.

Both of these paths are being explored by the state, and I would submit that the report on “Investment in Education” is an indispensable guide.

Contribution by C. O hEOCHA

In confining my remarks to a few aspects of university education, I am limiting myself to the only branch of education of which I have some first-hand knowledge. The authors of “Investment in Education” make it clear that their findings in this area are tentative since the Commission on Higher Education is addressing itself specifically to this problem. And, as has been pointed out by Mr. Patrick Lynch himself, the recent changes in the N.U.I. Matriculation requirements are bound to affect the projections on university student numbers contained in the report. The percentage participation in university education in 1970/71 by 19 year olds (in February, 1971) may be estimated to be 6.5 from the data given in “Investment in Education”. This falls well below the expected percentage of the age group entering on courses of British degree level in 1968/69 in France (14 per cent), Sweden (14 per cent), U.S.A. (35 per cent), Federal Republic of Germany (9 per cent) and U.S.S.R. (13 per cent), but is comparable to that expected in that year in Great Britain and the Netherlands (6 per cent)—data from the Robbins Report.

It would seem that more positive incentives will need to be given by the State to ensure that the supply of graduates available to the country on a population basis in the early 1970s will not fall greatly behind other Western Countries. This is particularly so in view of the higher university entrance requirements to which I alluded and which were not taken into

account in arriving at the Irish percentage, and also in view of the problems arising from emigration of graduates referred to in the Lynch Report.

“Investment in Education” estimates that the total National University enrolment of full-time students in 1970/71 will be 14,600 and that of these about 10,000 will be at University College, Dublin. The estimated figures for 1975/76 are 17,500 and 12,000 respectively. This would leave 4,600 to be shared between U.C.C. and U.C.G. in 1970 and 5,500 in 1975. The present combined total in these two Colleges is not far off the projected figure for 1970 and it is difficult to understand why so little further growth is seen to be in store for these institutions, particularly in view of the explosive increase in their student numbers in the last 10 years.

In any case, it seems to me that it would be a grave national mistake not to take positive steps to ensure that the colleges at Cork and Galway reach maximum efficiency as soon as possible. That they are not fully efficient at the moment is due to limitation of staff, accommodation and facilities.

University staff and student numbers are closely linked and the deciding factor is the number of staff necessary to give adequate field coverage in the subjects taught in a university institution. The figure 300 is widely accepted. To quote J. S. Fulton, Vice-Chancellor, University Sussex (1962): “I doubt whether a community of scholars of less than 300 or so (and that is assuming a quite limited number of faculties) is a satisfactory or even adequate basis for discharging the university’s duties of promoting scholarship and teaching the young. If this is anywhere near right, and that a body of 300 or so is a minimum figure, then a calculation based on a staff/student ratio of 1 to 10 implies a matching student population of 3,000 . . . If I am right in saying that 3,000 is a reasonable figure, then there is bound to be a lot to be said for reaching it as quickly as possible. I take this view, and I am reinforced in taking it by a reflection about the pressures to which the universities are now subject. If staff is scarce overall, then a large number of small institutions—remaining small for a long time—is on balance wasteful. If there are limited capital resources—and they will always be limited—then to spend them on institutions which can make only a very meagre contribution towards the relief of the national pressures on entry is another form of extravagance. In other words, if the new universities cannot reach the figure of 3,000 to which I have referred earlier, within a period of 10 years, I should doubt whether there is a strong case for founding them at this particular time”.

Perhaps the authors of “Investment in Education” were influenced by their projection that the population of Connacht would drop by 0.002 per cent between 1966 and 1971, but I would argue that a viable university institution of international stature on which the nation would depend for graduates and expertise in some subjects such as, for example, oceanography and theatre arts would be of great assistance to the “Save the West” campaign.

In the interest of educational efficiency and economy, policy should be

formulated to ensure that student enrolment at U.C.C. and U.C.G. reaches 3,000 in a short number of years and that their teaching staffs should rise to 300 each over the same period. The report stresses the relative inefficiency of one and two-teacher schools. The same reasoning applies with possibly even greater force to one and two-teacher university departments.

The task of providing sufficient staff to cover the various aspects of university subjects in depth is at the moment more formidable at U.C.G. than at either of the other N.U.I. colleges. J. P. McHale (*Studies*, Summer/Autumn, 1965) pointed out that on the basis of subsidies per full-time student "Galway appears to be the least endowed of the colleges", despite the fact that "there is a minimum size for any department irrespective of the number of students". The position is further aggravated by the fact that the fees charged at U.C.G. are lower because of the commitment of the college to attract students who are prepared to take courses through Irish, and also because of the generally lower incomes of families in the west. The burden of these national and social services should hardly be expected to be borne by the college, which should, rather, be compensated by the State for the consequent shortfall in its income. (If the U.C.D. scale of fees applied in Galway, the college would, at the moment, have an additional income of about £50,000 per annum from this source; needless to say such a sum would be of great help in easing the staffing shortage.)

The suggestion contained in "Investment in Education" that additional State support for university education might be more indirect (large scholarships and grants awarded on a national basis, accompanied by high university fees) would ensure not only that university education would be more equitably available to all groups regardless of their social or geographic positions, but would also benefit U.C.G. in that fees could be raised to those obtaining in the other colleges and the State support per student would thereby be raised from the present minimum. These proposed scholarships would vary in value in accordance with income and residence, but they could also be used to ensure that student population in U.C.G. and U.C.C. rise to the desirable level of about 3,000 each; scholarship holders electing to study in either of these colleges would receive somewhat larger grants, at least while the need existed to attract students to Cork and Galway.

On the question of buildings and other capital facilities "Investment in Education" states that "it may be assumed that at least £250,000 will be necessary in Galway". How this ridiculous figure was arrived at is not explained; suffice it to say that the Commission on Accommodation Needs of the Constituent Colleges of the National University estimated in 1959 that £600,000 would be required to provide buildings suitable for 1,000 full-time students at U.C.G. Only a fraction of this sum has been granted, the student enrolment is now 2,000 and the value of money has not increased since that Commission reported.

The number of students studying science subjects in Irish universities rose from 600 in 1951 to 1,600 in 1961, and the projected number of

undergraduate science students in 1970/71 is 2,000. This represents an increase of 25 per cent, as against a projected overall full-time student increase of 70 per cent in the same period. The present chronic shortage of science graduates in this country is stressed in the 1965 Annual Report of the Institute for Industrial Research and Standards. Dr. Werner Rasmussen of Denmark, stated in connection with the O.E.C.D. report "Training of Technicians in Ireland" (1964), for which he acted as examiner, that "there seemed to be a lack of awareness (in Ireland) of the general need for scientific and technical education". It would appear that the change in emphasis in University Faculty entrance will not occur spontaneously, and "Investment in Education" notes that "it is a matter for consideration whether it might not be desirable to take some steps to encourage more rapid development of some other faculties (other than Arts)".

In view of the increasing dependence of modern industry and agriculture on science and of the Lynch Report's forecast of a shortfall in *qualified science teachers* at second level education, to say nothing of the desirability of giving all deserving and aspiring youths the opportunity of becoming involved in the exciting intellectual experience of modern science, it is apparent that policy should be directed towards bringing the percentage of science students closer to that of the overall projection of the student population increase in 1970/71. Presumably the improved and more widespread facilities available at the second level will help in this direction, but the trend could be accentuated by awarding bigger university scholarships to at least some of the students who enter the Science Faculties of universities.

The projected number of post-graduate students in Science in 1970/71 is given in the Lynch Report as 120 in the three colleges of N.U.I. If one assumes that these will be spread over about eight scientific disciplines in three colleges, the average number of research students per department will be five, which by international standards would have been low 10 years ago and it would seem that positive policy decisions will have to be taken to ensure that the projected figure will be improved upon. Post-graduate research in university departments is generally accepted as being essential for effective undergraduate teaching; this and other advantages were stressed in the Report "Fundamental Research and the Policies of Government" which was recently endorsed by the O.E.C.D. Ministerial Meeting on Science.

Our being a small country is often given as a reason for our spending less proportionately on university and particularly advanced scientific education, but this O.E.C.D. Report stressed that the opposite is the case. Most small countries, it is pointed out "spend relatively small amounts on defence research and development and the burden of development costs in other fields, such as aircraft production and atomic power, is likewise small . . . In fact the proportion of the G.N.P. of these countries devoted to fundamental research, including participation in international projects, should be greater and not less than those of larger countries if

they are to be in a position to exploit available world knowledge and avoid a gradual descent to a kind of economic and scientific colonialism”.

DISCUSSION

Prof. J. J. O'Meara: It has long been known to those that care to examine the problem that, despite the public claims put forward on many occasions that the Irish education system was the best in the world, all was not well. No notice was taken of the informed representations of the I.N.T.O. in the late forties, for example. In conjunction with others I made a careful examination in 1957-58 the results of which appeared in a pamphlet (“Reform in Education 1958”). Later the Federation of Lay Secondary Schools brought out a well documented study of education in Ireland under the title “Investment in Education” precisely. But although these earlier (and, of course, other) efforts had their effect on public opinion and the Department of Education, it was not until now, with the publication of the O.E.C.D. Report, “Investment in Education”, that it is officially admitted that substantial reform is needed, and that a comprehensive series of statistics are available. This is a great psychological gain and real progress becomes possible.

The Report “Investment in Education” did well, in my view, to be very sparing in its interpretation of the statistics it made available: if it had not done so, it would inevitably have aroused suspicion. The interests of religion and language movement have tended to overshadow cold analysis in Irish education. The Report did the further essential service of commending a Development Branch within the Department of Education. We are only at the beginning: the development branch must continue the work of the O.E.C.D. committee. It is absolutely essential, however, that people of achievement and experience in all areas of education in Ireland be consulted by the development branch. It is equally essential that the administrators within the Department, frequently having little, if any, practical experience in teaching or research or special qualifications on the academic side, should treat the opinions of experts *as expert*.

A constant inhibition on education progress in Ireland is shortage of money. Since this is true, it is important that money be spent wisely. Unfortunately prejudices of one kind or another have both held up our educational advancement since 1916 and committed us to serious wastage of money and resources.

One theme common to the papers of Mr. Cannon, Mr. McCarthy, Dr. Milne and Professor O hEocha was the prevalence of small uneconomic units in the stages of Irish Education. In general the one-teacher, at any rate, and two-teacher primary schools are inefficient and expensive. What is not so clearly seen is that the vocational (less misleadingly termed continuation) schools are part of the same pattern. While there may be, say, 100,000 enrolments in vocational schools, only 25,000 of these are full-time, and of these again only 2,000 (in urban areas) are really vocational. The main work of these schools (for 92 per cent of their full-time

students) is continuation—in fact an extension of primary education with modest adjustments in a vocational direction, and a poor local and free version of the secondary (grammar) school. Until now the pupils of these schools were specifically prohibited from sitting for the Intermediate Certificate Examination and, not having Latin (except in one school in Dublin) in their curriculum, were debarred from half the Faculties of the National University. These factors demoralized the students. They also demoralized the teachers—who, in addition, tended to be part-time, since, outside of the cities, there was not enough “vocational” work in these schools (apart from other considerations) to justify their being full-time. The many one and two-teacher schools built in many rural areas since 1930 repeat—without the justification of the historical circumstances affecting the primary schools, which, when they were built, had to be built within easy reach of small children in areas, moreover, that were then populous—even more notably the inefficiency and expense of the primary schools. And now that religious suspicions are yielding to the desire to co-operate, it is evident that in Dublin, for example, the small, specialist, expensive but essential departments such as, Classics, Eastern Languages, and many Post-Graduate Research Departments, should work together. Two-teacher university departments have no hope of covering their subjects adequately.

Let us not plead shortage of money until we have had the courage to eliminate the very significant waste that has, partly persisted, and partly been created during the last 50 years. These years have seen stagnation and even in certain ways regression (there was proportionally more teaching of science, commerce and modern languages in 1900 than in 1950). Now, however, with the appearance of “Investment in Education” all that is, even officially, past.

Mr. Arnold Marsh: I think the most important statistic given to us this evening may have been in Appendix 3 to Mr. Cannon’s paper, where we see that the average income per head in the Republic was £232 in 1960, whereas the average for the United Kingdom in 1961 was £511. To that might be added that our population per square mile was a little over 100, whereas that of Northern Ireland is about 250, and of the United Kingdom something approaching 1,000. This very wide scattering of our population makes “rationalization” of our schools expensive, while the low income makes the burden more oppressive. The proportion of national income spent on education here is, however, much lower. I wonder does our figure include the cost of new schools. Even so, it looks low. We have the benefit of the “free” services of the religious orders, but that makes a difference to the Exchequer of only the difference between the amounts paid to all members of the orders, whose orders get the unmarried teachers’ rates in the religious schools.

The tables give little but depressing information and are not fair to what has been done. Since self-government became a reality in 1922 the numbers of secondary pupils have quintupled, and that without any compulsion and almost without the help of scholarships from public

funds, while in the case of universities the growth has been phenomenal, especially in Cork and Galway, and we have also had the uprush of numbers of students at undergraduate level at colleges of technology.

We have much to do but we have done a great deal. Another 40 years of such growth will take us where?

I don't know. None of our speakers have questioned the benefits of education, but these need to be looked at. An old German friend of mine, an eminent philologist who knows most European languages and has lived among country people in several countries, came back after a six weeks' stay in the Donegal Gaeltacht in the 1940s, saying that the people there were the most civilized he had ever known. They were illiterate, but their appreciation of finesses of expression, of music, of physical accomplishment, of good manners, of moral goodness, and their sensitivity to other people's feelings were beyond anything he had found elsewhere. Another year he went joyfully to enrich himself further by living with the people in another Gaeltacht, and returned in deep disappointment. Those he had stayed with, and almost all he had met, had been to school, and had no culture. They were barbarians compared with the Donegal unschooled.

Such things have to be considered as seriously as statistics.