

**NESC REPORT NO. 18**

**POPULATION PROJECTIONS 1971-86:  
THE IMPLICATIONS FOR EDUCATION**

Price: £1.40



**NATIONAL ECONOMIC  
AND SOCIAL COUNCIL**

***Population Projections 1971-86:  
The Implications for Education***

**NATIONAL ECONOMIC AND SOCIAL COUNCIL  
CONSTITUTION AND TERMS OF REFERENCE**

1. The main task of the National Economic and Social Council shall be to provide a forum for discussion of the principles relating to the efficient development of the national economy and the achievement of social justice, and to advise the Government through the Minister for Finance on their application. The Council shall have regard, *inter alia*, to:

- (i) the realisation of the highest possible levels of employment at adequate reward,
- (ii) the attainment of the highest sustainable rate of economic growth,
- (iii) the fair and equitable distribution of the income and wealth of the nation,
- (iv) reasonable price stability and long-term equilibrium in the balance of payments,
- (v) the balanced development of all regions in the country, and
- (vi) the social implications of economic growth, including the need to protect the environment.

2. The Council may consider such matters either on its own initiative or at the request of the Government.

3. Members of the Government shall be entitled to attend the Council's meetings. The Council may at any time present its views to the Government, on matters within its terms of reference. Any reports which the Council may produce shall be submitted to the Government and, together with any comments which the Government may then make thereon, shall be laid before each House of the Oireachtas and published.

4. The membership of the Council shall comprise a Chairman appointed by the Government in consultation with the interests represented on the Council

- Ten* persons nominated by agricultural organisations,
- Ten* persons nominated by the Confederation of Irish Industry and the Irish Employers' Confederation,
- Ten* persons nominated by the Irish Congress of Trade Unions,
- Ten* other persons appointed by the Government, and
- Six* persons representing Government Departments comprising one representative each from the Departments of Finance, Agriculture and Fisheries, Industry and Commerce, Labour and Local Government and one person representing the Departments of Health and Social Welfare.

Any other Government Department shall have the right of audience at Council meetings if warranted by the Council's agenda, subject to the right of the Chairman to regulate the numbers attending.

5. The term of office of members shall be for three years renewable. Casual vacancies shall be filled by the Government or by the nominating body as appropriate. Members filling casual vacancies may hold office until the expiry of the other members' current term of office and their membership shall then be renewable on the same basis as that of other members.

6. The Council shall have its own Secretariat, subject to the approval of the Minister for Finance in regard to numbers, remuneration and conditions of service.

7. The Council shall regulate its own procedure.

# NATIONAL ECONOMIC AND SOCIAL COUNCIL

## *Population Projections 1971-86: The Implications for Education*

DUBLIN  
PUBLISHED BY THE STATIONERY OFFICE

To be purchased from  
GOVERNMENT PUBLICATIONS SALE OFFICE, G.P.O. ARCADE, DUBLIN 1  
or through any Bookseller.

Price: 30p

(Prl. 5375)

NATIONAL ECONOMIC AND SOCIAL COUNCIL  
MEMBERS

*Chairman:* Prof. W. J. L. Ryan

*Nominated by the Government:*

|                    |                    |                     |
|--------------------|--------------------|---------------------|
| Mrs. H. Burke      | Mr. A. N. O'Brien  | Mr. G. A. Meagher   |
| Prof. N. J. Gibson | Mr. P. Rock        | Mr. C. H. Murray    |
| Prof. D. Hannan    | Mr. J. Walsh       | Mr. T. O'Cearbhaill |
| Dr. K. Kennedy     | Dr. T. K. Whitaker | Mr. P. O'Slatarra   |
| Prof. P. Lynch     | Mr. M. J. Barry    | Mr. M. N. Murphy    |
| Mr. C. Mac Gabhann | Dr. B. Hensey      |                     |

*Nominated by the Confederation of Irish Industry:*

|                  |                    |                   |
|------------------|--------------------|-------------------|
| Mr. F. A. Casey  | Mr. J. H. Donovan  | Mr. J. H. D. Ryan |
| Mr. L. Connellan | Mr. R. I. Morrison |                   |

*Nominated by the Irish Agricultural Organisation Society:*

|                 |              |                |
|-----------------|--------------|----------------|
| Mr. J. Buttimer | Mr. P. Kelly | Mr. P. Raftery |
|-----------------|--------------|----------------|

*Nominated by the Irish Congress of Trade Unions:*

|                       |                  |                |
|-----------------------|------------------|----------------|
| Mr. A. Barr           | Mr. B. G. Harkin | Mr. D. Nevin   |
| Mr. J. Carroll        | Mr. D. Larkin    | Mr. R. Roberts |
| Mr. W. J. Fitzpatrick | Mr. D. Murphy    |                |
| Senator F. Kennedy    | Mr. P. Murphy    |                |

*Nominated by the Irish Creamery Milk Suppliers' Association:*

|                 |               |                       |
|-----------------|---------------|-----------------------|
| Mr. P. Hourigan | Mr. D. Murphy | Mr. T. J. O'Callaghan |
|-----------------|---------------|-----------------------|

*Nominated by the Irish Employers' Confederation:*

|                   |               |                    |
|-------------------|---------------|--------------------|
| Mr. M. Greene     | Mr. A. Shiel  | Mr. J. J. O'Reilly |
| Mr. D. J. McAuley | Mr. P. Murphy |                    |

*Nominated by the Irish Farmers' Association:*

|                |                       |
|----------------|-----------------------|
| Mr. D. Cashman | Mr. P. Lane           |
| Mr. S. Healy   | Mr. J. Richards-Orpen |

**CONTENTS**

|   |    |
|---|----|
| I. Introduction                                       | 5  |
| II. Population 1971-96                                | 8  |
| III. Participation Rates and Enrolment                | 13 |
| IV. Enrolment Projections and the Demand for Teachers | 24 |
| V. School Building                                    | 30 |
| VI. The Third Level                                   | 33 |
| VII. Conclusions                                      | 39 |

## **Chapter I**

### **INTRODUCTION\***

1. In order to develop a longer term perspective within which plans for economic expansion and social development might be formulated, the Council commissioned Professor Brendan Walsh to make population projections for the period 1971 to 1986. His projections and the Council's comments and conclusions were published in February 1975.<sup>1</sup> The Council had to take an initiative because no official population projections were available.

2. This is one of a series of studies by the Council to explore the economic and social implications of Professor Walsh's projections. This report is concerned with the growth in the school-age population implicit in Walsh's study, and with the resulting implications for pupil enrolments, teacher demand, school building and finance.

3. For the first, and part of the second level, of education (up to age 15) population and enrolment in schools are now almost synonymous.<sup>2</sup> For the 15 to 18 age group—for whom school attendance is not compulsory—population is a strong influence on enrolment, as also are steadily increasing participation rates. At the third level, enrolment rates are very low (generally less than 10% of the age cohort in recent years), and factors independent of population (such as the structure of third-level

\*Following discussions in the Social Policy Committee, and by the Council at its meeting on 25 March 1976, successive drafts of this report were prepared by Mr. John Sheehan, Lecturer in Economics, University College Dublin.

<sup>1</sup>NESC Report No. 5 "Population and Employment Projections 1971-86" Dublin, Stationery Office, 1975.

<sup>2</sup>Except for the 0 to 4 age group.

education and the general economic situation)<sup>3</sup> can materially affect the numbers attending third-level institutions. The implications for third level education are not dealt with in detail in this report, because of the dominance of factors other than the numbers in the relevant age group on the rate of participation.

4. Professor Walsh's population projections and those made in this document concerning the education system are not of course forecasts of what *will* happen. Rather they project what *may* happen under certain sets of explicit assumptions, and thus enable judgements to be made about the sensitivity of certain results to variations in assumptions. The formulation of the assumptions are as important as the calculation of the resulting numbers in both Walsh's work and this exercise.

5. *As far as possible similar assumptions to those used by Walsh have been used in deriving population trends for this exercise.* However, in the course of the work it became apparent from recent data on enrolments that the initial estimates for 1976 were too low. Further investigation showed that significant net immigration has certainly occurred in the 1971-76 period, and that the under 15 age groups account for an important proportion of this immigration. As a result, some adjustments have had to be made to the population projections made by Walsh.

6. In working out the implications of the population trends *it has been assumed as far as possible that existing educational policies will be continued and that any new policies already announced will be implemented.* Account has also been taken of past trends in the educational system—for example, the participation rate of those aged over 15 in full-time education. There are, however, areas where past trends are of little use because of recent structural changes—for example, in attempting a breakdown of future increases in second level enrolments

<sup>3</sup>For example, the supply of third-level education is a function of government decisions about institutional structure and financing arrangements. These decisions will also depend on the relative cost of different kinds of third level institutions. The demand for different types of third-level education is also linked to relative costs, finance (e.g. student loans) and to the market for qualified manpower.

between Secondary, Vocational and Community/Comprehensive<sup>1</sup> schools. In such cases assumptions have been made based on such indications as can be found concerning the direction of future policy.

7. Finally, this study goes beyond the scope of Walsh's study in one respect. Walsh's figures cover births up to 1986. These have been supplemented by calculations of births for a further six years (to 1992)<sup>2</sup> to give sufficient data for the population of school-going age in 1991 and 1996. Naturally, any 1986-96 projections are subject to greater uncertainty (reflected in the wider variations obtained under different assumptions about nuptiality, fertility and migration), but they seemed worthwhile as the 0-14 population in 1986 determines much of the enrolment trend to 1996 and a relatively small extension of Walsh's data was necessary to derive them.

<sup>1</sup>For the purposes of this paper Community and Comprehensive schools are aggregated into a single sector, because the curriculum size, and resource use of such schools appear to be similar.

<sup>2</sup>For completeness approximate estimates were also made of the 0-4 age group in 1996. See Table II-1.

## Chapter II

### POPULATION 1971-96

8. Professor Walsh calculated two sets of population projections, one based on zero net emigration 1971-76 and 5,000 per annum net emigration from 1976-86, the other based on zero net emigration throughout the period. In addition, he used two alternative assumptions of nuptiality and two of fertility, which are especially important for alternative projections of the population aged 0-14. Altogether, therefore, it is possible to construct eight alternative projections of the school-age population for the period 1971 to 1986 from Walsh's data. When these eight projections are further combined with alternative hypotheses concerning enrolment rates in education etc., it is clear that the number of projections becomes unmanageably large.

9. Consequently, two basic population estimates have been chosen, and these have been combined with two alternative assumptions on enrolment rates to give four enrolment projections.

10. The first population projection (referred to as Lp) is based on the lowest estimate made by Walsh. Net emigration was assumed to be zero in the 1971-76 period and 5,000 per annum from 1976 to 1986.<sup>1</sup> In addition, fertility was assumed to decline at twice the rate observed between the 1966 and 1971 censuses, for all age groups except 15-19, for whom it was assumed to remain constant at 1966-71 rates. Finally, Walsh's low nuptiality assumptions were combined with the fertility assumptions to give numbers of births.<sup>2</sup>

11. The second and higher population projection (Hp) assumes zero net emigration for the entire 1971-86 period, and is combined with

<sup>1</sup>NESC No. 5, *op. cit.* p. 30.

<sup>2</sup>NESC No. 5, Appendix A describes the nuptiality and fertility assumptions in detail.

Walsh's high fertility and low nuptiality assumptions.<sup>1</sup> The high fertility projection assumes a continuation of 1966-71 rate of decline (except for ages 15-19).

12. At first, school enrolment calculations for 1976 for both the high and low population projections produced the surprising result that enrolments at the first level would be approximately 20,000 less than that already reached in 1974. Furthermore, the numbers enrolled in 1974 appeared to be (for the 5 to 12 age groups) substantially greater than CSO population estimates for that year,<sup>2</sup> implying unexpected immigration since the 1971 census. There is some evidence that this occurred: the movements from 1971 to 1974 show a net *inflow* of approximately 15,000 and the OECD estimates a net inflow of 25,000 by sea and air since 1971.<sup>3</sup> However, these latter figures are of doubtful accuracy, being the residuals between very large gross inflows and outflows, and provide no information on the age structure of migrants. From previous census data it is known that emigration is concentrated heavily on the 15-24 age group, with net immigration occurring in the 5-14 and 25-29 age groups, at least in the 1966-71 intercensal period.

13. These figures, together with the fact that the initial 1976 forecasts were suspiciously low for first level rather than second level suggest the following.<sup>4</sup> During 1971-75 there was substantial net immigration

<sup>1</sup>This corresponds to the second highest of Walsh's population projections. We do not use the highest—involving assumptions of high nuptiality and high fertility—because like Walsh we have some doubts about their plausibility (see NESC No. 5, p. 64).

<sup>2</sup>Data supplied by the Department of Education. The excess of enrolment over population estimates was 10,000 for the 5-12 age group; this is a lower bound estimate of "excess" population aged 5-12 as the true enrolment rate may have been less than 100%.

<sup>3</sup>See OECD Report on the Irish Economy, November 1975. The OECD figures include sea and air movements only, whereas the figure of 15,000 (compiled from the *Irish Statistical Bulletin*) includes cross-border public transport movements. However, the latter accounts for very small net differences. The differences could be due to slightly different time periods as the figures are highly seasonal. In any event cross-border private transport movements must remain an unknown element in the equation.

<sup>4</sup>In the absence of a census in 1976, the following statements must remain tentative for some time.



in the 25–39 age group, consisting mainly of trained and skilled workers drawn from the very large pool of young emigrants of the later 1950s and early 1960s. The children of these immigrants have caused substantial net immigration in the 0–14 age group. For the 15–24 age group there is still probably significant net emigration, as the return flow has not built up to sufficient proportions to offset the outflow of unskilled workers.

14. Furthermore, this pattern (which was already emerging in the 1966–71 intercensal period) is likely to be temporary because:

- (i) The 1975–76 recession and the very high unemployment levels should act as a brake on immigration.
- (ii) To some extent very high emigration in the 1956–61 period results in an abnormally high number of people who wish to return to Ireland some 10 to 15 years later with skills, capital, etc.

Taking all the above factors into account, the following table shows the adjustments that have been made to Walsh's 1976 forecasts (and to the forecasts for subsequent years as a result of the changes in the 1976 figures). It must be emphasised that these adjustments are the *minimum* necessary if the 1976 figures are to be roughly reconciled with trends which have become apparent during the past two years.

15. This report is mainly concerned with the population aged 5–19, which is the potential school-going population.<sup>1</sup> It is assumed that due to immigration the population aged 5–14 will be 30,000 larger than implied in Walsh's projection. This is in line with the trends emerging by 1974, and gives an enrolment at the first level in 1976 of 548,000, compared to 544,000 in 1974, and 524,000 implied by Walsh's original 1976 population estimates. The population aged 10–19 in 1981, and aged 15–19 in 1986 is correspondingly adjusted to take account of the higher 1976 stock aged 5–14.

<sup>1</sup>Estimates are also made of the population aged 4, 67% of which is currently enrolled in schools. For the first and second levels enrolment of over 19's is insignificant. For the third level we will use Walsh's estimates of the 20–24 population in a later chapter (these are not affected by our adjustments) where we argue that demographic trends are in any event of lesser importance.

16. At the time of writing it was possible to estimate the number of births for the calendar years 1971 to 1975 (however, complete data for the last quarter of 1975 are not available). From this the population aged 0–4 at the beginning of 1976 can be estimated. The estimate obtained was 332,200, which is close to the  $L_p$  estimate for 1976, bearing in mind the latter refers to April, and the probability of some net immigration for the 0–4 age group in the years 1971–76 (immigration at half the rate assumed for the 5–14 age groups would give an 0–4 population of 340,000 approximately). Clearly, recent trends in the birth rate are close to those implied in the lower population projections in Table II.1. However, given the climate of economic uncertainty in recent years, and given past experience of frequent short-run changes in birth rates it is unwise to ignore completely the higher population projections and to make projections as if only one outcome (the lower one) was virtually certain.

17. The population projections in Table II.1 below, incorporate adjustments which represent the minimum departures from Walsh's assumptions, i.e. those necessary to remove obvious deviations from projected trends which have become apparent since the original projections were made. Clearly, a complete new set of population projections would have been beyond the scope of the present study.

**TABLE II.1**

**Population aged 0-19, 1976-96**

*I. Low population projection (Lp) '000*

| Age/Year | 1971 (a) | 1976         | 1981         | 1986         | 1991  | 1996  |
|----------|----------|--------------|--------------|--------------|-------|-------|
| 0-4      | 315.7    | 342.5        | 357.0        | 367.0        | (382) | (390) |
| 5-9      | 316.9    | 329.5        | 342.8        | 357.3        | 367.3 | (382) |
| 10-14    | 298.6    | <u>331.7</u> | <u>329.0</u> | 342.2        | 356.6 | 366.6 |
| 15-19    | 267.7    | <u>297.7</u> | <u>322.5</u> | <u>319.9</u> | 331.7 | 345.8 |

*II. High population projection (Hp)*

| Age/Year | 1971 (a) | 1976         | 1981         | 1986         | 1991  | 1996  |
|----------|----------|--------------|--------------|--------------|-------|-------|
| 0-4      | 315.7    | 355.9        | 404.1        | 457.1        | (514) | (550) |
| 5-9      | 316.9    | 329.5        | 355.4        | 403.6        | 456.5 | (513) |
| 10-14    | 298.6    | <u>331.7</u> | <u>329.0</u> | 354.7        | 402.9 | 455.8 |
| 15-19    | 267.7    | <u>297.7</u> | <u>331.0</u> | <u>328.4</u> | 354.0 | 402.2 |

**Notes:**

(a) 1971 figures are taken from 1971 census of population.  
 Figures for 1991 and 1996 in parentheses are our own estimates based on further projections of Walsh's assumptions.  
 Figures underlined differ from Walsh because of immigration trends discussed in the text.

**Chapter III**

**PARTICIPATION RATES AND ENROLMENT**

18. A participation rate is the percentage of a given age group enrolled in full-time first or second-level education in a given year (third-level enrolments are considered separately). A transition ratio is the relation between the participation rate of (say) 16-year-olds in a particular year, and the participation rate of 15-year-olds for the previous year.

19. The forecasting of participation rates, which is an essential part of any enrolment forecast, is subject to many difficulties. There are the errors in measuring past participation rates for the 1972 to 1975 period, which are related to the difficulties of measuring age-cohorts with inadequate information on migration.<sup>1</sup> Furthermore, data for 1975 (and presumably in future years also) are based on a different time of year, which make the figures incompatible with those for earlier years. The projections in this chapter are based on annual participation rate measurements published by the Department of Education.

20. Forecast of participation may be based on the regression of observed rates on *per capita* income, unemployment, family size and other observations. This is complicated by the availability of only eleven observations for each age-group and by at least five major policy changes which affected the whole structure of participation in the post-1967 period. These were (a) the abolition of second-level fees; (b) the introduction of a free transport scheme; (c) the introduction of third-level grants; (d) the introduction of a wider and more advanced range of subjects in vocational schools, and (e) the raising of the school leaving age to 15.

<sup>1</sup>Thus, the participation rates published by the Department of Education may be biased upwards in so far as the CSO population estimates on which they are based are biased downwards. In the absence of a census in 1976, accurate participation rate measures for recent years will be impossible.

21. To avoid the difficulties described in the previous paragraph, it might be possible to specify some "saturation" or maximum level of participation for each age or age-group and to estimate the time-path of adjustment to this saturation level.<sup>1</sup> However, choice of saturation level is almost certainly going to be arbitrary, and comparison with other reasonably similar educational systems is of little help—for example, Irish participation rates are already higher than those for the UK for the 16–18 age group (the "voluntary enrolment" group), and the UK figures have shown a steady upward trend for a period of 30 years (1944–74) since the introduction of universal "free" second-level education there.

22. It seemed appropriate, therefore, to use less formal methods of forecasting, which could also incorporate certain qualitative information on likely enrolment trends. In this context it must be noted that linear projection of past trends of participation rates will often produce 100% participation within a few years. Any such result would be naive so long as education has a real cost (in terms of foregone income) to the pupil.<sup>2</sup> Thus maximum participation rates should be constrained at less than 100% for the voluntary (i.e. 15 plus) age group, and should diminish as age and "foregone income" increases.

23. In recent years (since about 1970), while participation rates have continued to increase, transition rates have, for the most part, remained fairly stable. A notable exception is the transition rate between 13 and 14 which has moved upwards between 1972 and 1974 reflecting the impact of the increased minimum school-leaving age.

<sup>1</sup>This is similar to some studies of the demand for consumer durables where a logistic curve describes the adjustment of the actual stock of durables to some "desired" or "saturation" level over time.

<sup>2</sup>Strictly, it should be assumed that education will be demanded beyond age 15 as long as the discounted present value of future earnings net of all privately borne educational costs (including foregone income) is positive. Given fairly high rates of time-preference and the low rates of return to education reported for some of the Irish labour force (see B. M. Walsh and B. J. Whelan: *A Microeconomic Study of earnings in Ireland*, Economic and Social Review, Volume 7, No. 2, January 1976), participation rates should not be expected to rise to 100% for voluntary enrolment age-groups.

24. The following table (III.1) shows 3-year moving averages for transition rates in recent years. Three-year averages are used to smooth out the relatively minor year-to-year fluctuations.

**TABLE III.1**  
**Three-year Moving Averages of Transition Ratios(a) 1969–70 to 1973–74**

| Years/ages         | 14–15 | 15–16 | 16–17(b) | 17–18(b) |
|--------------------|-------|-------|----------|----------|
| 1969–70 to 1971–72 | 0.85  | 0.79  | 0.68     | 0.34     |
| 1970–71 to 1972–73 | 0.85  | 0.80  | 0.69     | 0.33     |
| 1971–72 to 1973–74 | 0.86  | 0.81  | 0.68     | 0.34     |

*Notes:*

(a) Transition ratios are the proportion of population aged  $n$  years in full-time enrolment in year  $t$  to the proportion aged  $n-1$  enrolled in year  $t-1$ .

(b) Figures for 17 and 18-year-olds refer to second-level enrolments only.

Two assumptions about participation rates are used in deriving the enrolment projections. The first is that 1974 participation rates remain constant, thus giving a low enrolment assumption (Le).<sup>1</sup> The second—the higher enrolment assumption (He)—is based on rising participation rates in the 1974–78 period and constant rates thereafter. These rates are calculated by applying the average transition ratios in Table III.1 to a participation rate of 97% for 14-years-olds (equal to the rate attained by 13-year-olds before the school leaving age was raised in 1972). Participation rates for the 4 to 13 age group are approximately the same as for 1974.

25. The results are set out in Table III.2. Column A gives the 1974 rates which are also used for the low enrolment (Le) projections. Column B gives the high (He) projections. In addition, all enrolment forecasts neglect enrolments of pupils less than 4 and older than 19. Enrolments of 19-year-olds (which have been static at the second level for some years) are assumed to be 1,500 for all periods.

<sup>1</sup>This is similar to the assumption made by Walsh of constant 1971 participation rates in projecting the labour force aged 15–19. Since 1971, participation has risen significantly.

**TABLE III.2**

**Participation Rates in Full-time First and Second-Level Education (%)**

| Age  | A (1974) rates | B (High participation rate from 1978) |
|------|----------------|---------------------------------------|
| 4    | 66.7           | 66.7                                  |
| 5-12 | 100.0*         | 100.0                                 |
| 13   | 99.4           | 99.5                                  |
| 14   | 92.4           | 97.0                                  |
| 15   | 77.7           | 85.0                                  |
| 16   | 59.6           | 68.0                                  |
| 17   | 38.3           | 46.0                                  |
| 18   | 13.2           | 16.0                                  |

\*Department of Education estimates imply a rate which is >100% because of underestimation of population.

26. Application of participation rates to population projections<sup>1</sup> yields aggregate enrolment forecasts for each age-cohort. This must be divided into first and second level, and for this purpose the following assumptions were made about the enrolment of the 11 to 14-year age-group. All enrolments of those aged less than 11 years and more than 14 years were allocated to first and second levels respectively; the percentages allocated in the intermediate groups were: 11—90% first and 10% second level; 12—55% first and 45% second level; 13—15% first and 85% second level; 14—3.5% first and 96.5% second level. These percentages are close to the actual figures for recent years.

27. Within the various levels the figures were further disaggregated as follows: first level was divided between national, special and non-aided primary; second level between secondary, vocational and community/comprehensive (one category). Vocational included second-level enrolments in Regional Technical Colleges.

28. At the first level the share of non-aided primary schools has fallen during the past decade from 4.5% to about 4.25% of total first level,

<sup>1</sup>The population data in Chapter II were broken down into annual age-cohorts for the purposes of this calculation. This was done partly by interpolation and partly by using annual data on births and mortality rates.

while that of special schools increased from under 1% to over 1.25%. It was assumed that non-aided primary would have 4.0%, and special schools 1.5% of total enrolments in all future periods, leaving the residual (94.5%) in national schools.

29. At the second level recent experience is no guide to the future trend of enrolments in various types of school, because the provision of comprehensive schools in the past 6 years, together with the current emphasis on the community school can be expected to produce a major change in the structure of the system. Policy statements are largely qualitative in nature (apart from fairly short-term building plans). It has been assumed that 50% of the *expansion* in second level enrolment will be in the community/comprehensive sector,<sup>1</sup> 35% in the secondary and 15% in the vocational schools.<sup>2</sup> This is roughly in line with the share of community schools in capital expenditure in recent years, and the growth of the secondary and vocational sectors is proportionate to their present size. These assumptions go beyond any existing policy statements but they seem reasonable, and are roughly in line with some current indications. Furthermore, they give the plausible result that the faster the growth of population and enrolment generally at the second level, then the greater the importance of the community-type schools.

30. The four principal enrolment projections are given in the tables below. The first (LpLe) combines the lowest of the population assumptions used by Walsh with a low participation rate assumption, and the second (LpHe) combines a higher participation rate with the low population assumption. The LpLe projection would seem to be the minimum projection of enrolments compatible with Walsh's assumptions.

31. The third and fourth projections use Walsh's high fertility, low nuptiality, zero emigration assumptions (Walsh's second highest population projection, his highest having been disregarded as implausible), together with low enrolment (HpLe) and high enrolment (HpHe) assumptions. The actual (February) 1971 and 1974 figures are given for comparison.

<sup>1</sup>This will in fact take place almost entirely in community schools, as the comprehensive programme is now completed.

<sup>2</sup>In addition enrolments in other miscellaneous second level establishments are assumed to remain constant at 4,000.

TABLE III.3

Projected Enrolments at First and Second Level 1976-96 ('000)

1. Low population, low enrolment rate (LpLe)

| Year*                         | 1971<br>(actual) | 1974<br>(actual) | 1976  | 1981  | 1986  | 1991  | 1996  |
|-------------------------------|------------------|------------------|-------|-------|-------|-------|-------|
| National Schools              | 496.9            | 516.1            | 517.5 | 534.8 | 555.0 | 574.1 | 592.8 |
| Special Schools               | 5.7              | 7.0              | 7.8   | 8.5   | 8.8   | 9.1   | 9.4   |
| Non-Aided Primary             | 24.1             | 23.3             | 23.0  | 22.6  | 23.5  | 24.3  | 25.1  |
| Total: First Level            | 526.7            | 546.4            | 548.3 | 565.9 | 587.3 | 607.5 | 627.3 |
| Secondary                     | 152.9            | 168.9            | 177.5 | 181.0 | 182.7 | 186.5 | 190.4 |
| Vocational                    | 50.3             | 59.6             | 63.4  | 64.9  | 65.6  | 67.0  | 68.0  |
| Community/Comprehensive       | 1.6              | 9.8              | 22.1  | 27.2  | 29.6  | 34.8  | 40.4  |
| Other                         | 3.4              | 3.5              | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| Total: Second Level           | 208.2            | 241.8            | 267.0 | 277.1 | 281.9 | 292.3 | 302.8 |
| Total: First and Second Level | 734.9            | 788.2            | 815.3 | 843.0 | 869.2 | 899.8 | 930.1 |

\*These refer to those school years the greater part of which falls in the year named—e.g. 1971 refers to the school year 1970-71.

TABLE III.3—continued

2. Low population, high enrolment rate (LpHe)

|                               | 1971  | 1974  | 1976  | 1981  | 1986  | 1991  | 1996  |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|
| National Schools              | 496.9 | 516.1 | 517.5 | 534.8 | 555.0 | 574.1 | 592.8 |
| Special Schools               | 5.7   | 7.0   | 7.8   | 8.5   | 8.8   | 9.1   | 9.4   |
| Non-Aided Primary             | 24.1  | 23.3  | 23.0  | 22.6  | 23.5  | 24.3  | 25.1  |
| Total: First Level            | 526.7 | 546.4 | 548.3 | 565.9 | 587.3 | 607.5 | 627.3 |
| Secondary                     | 152.9 | 168.9 | 183.6 | 188.4 | 189.7 | 193.7 | 198.0 |
| Vocational                    | 50.3  | 59.6  | 65.9  | 67.9  | 68.6  | 70.3  | 72.0  |
| Community/Comprehensive       | 1.6   | 9.8   | 30.8  | 37.6  | 39.6  | 45.3  | 51.3  |
| Other                         | 3.4   | 3.5   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| Total: Second Level           | 208.2 | 241.8 | 284.3 | 297.9 | 301.9 | 313.3 | 325.3 |
| Total: First and Second Level | 734.9 | 788.2 | 832.6 | 863.8 | 889.2 | 920.8 | 952.6 |

**TABLE III.3—continued**

*3. High population, low enrolment rate (Hple)*

|                                      | 1971         | 1974         | 1976         | 1981         | 1986         | 1991           | 1996           |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|
| National Schools                     | 496.9        | 516.1        | 517.5        | 550.5        | 617.8        | 698.0          | 785.2          |
| Special Schools                      | 5.7          | 7.0          | 7.8          | 8.7          | 9.8          | 11.1           | 12.5           |
| Non-Aided Primary                    | 24.1         | 23.3         | 23.0         | 23.3         | 26.2         | 29.5           | 33.2           |
| <b>Total: First Level</b>            | <b>526.7</b> | <b>546.4</b> | <b>548.3</b> | <b>582.5</b> | <b>653.8</b> | <b>738.6</b>   | <b>830.9</b>   |
| Secondary                            | 152.9        | 168.9        | 177.5        | 181.8        | 183.7        | 196.3          | 209.9          |
| Vocational                           | 50.3         | 59.6         | 63.3         | 65.1         | 65.9         | 71.3           | 77.2           |
| Community/Comprehensive              | 1.6          | 9.8          | 22.2         | 28.3         | 30.9         | 48.9           | 68.4           |
| Other                                | 3.4          | 3.5          | 4.0          | 4.0          | 4.0          | 4.0            | 4.0            |
| <b>Total: Second Level</b>           | <b>208.2</b> | <b>241.8</b> | <b>267.0</b> | <b>279.2</b> | <b>284.5</b> | <b>320.5</b>   | <b>359.5</b>   |
| <b>Total: First and Second Level</b> | <b>734.9</b> | <b>788.2</b> | <b>815.3</b> | <b>861.7</b> | <b>938.3</b> | <b>1,059.1</b> | <b>1,190.4</b> |

20

*4. High population, high enrolment rate (Hphle)*

**TABLE III.3—continued**

|                                      | 1971         | 1974         | 1976         | 1981         | 1986         | 1991           | 1996           |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|
| National Schools                     | 496.9        | 516.1        | 517.5        | 550.5        | 617.8        | 698.0          | 785.2          |
| Special Schools                      | 5.7          | 7.0          | 7.8          | 8.7          | 9.8          | 11.1           | 12.5           |
| Non-Aided Primary                    | 24.1         | 23.3         | 23.0         | 23.3         | 26.2         | 29.5           | 33.2           |
| <b>Total: First Level</b>            | <b>526.7</b> | <b>546.4</b> | <b>548.3</b> | <b>582.5</b> | <b>653.8</b> | <b>738.6</b>   | <b>830.9</b>   |
| Secondary                            | 152.9        | 168.9        | 183.6        | 189.0        | 190.8        | 204.4          | 218.7          |
| Vocational                           | 50.3         | 59.6         | 65.9         | 68.3         | 69.0         | 74.7           | 81.0           |
| Community/Comprehensive              | 1.6          | 9.8          | 30.8         | 38.5         | 41.2         | 60.2           | 81.0           |
| Other                                | 3.4          | 3.5          | 4.0          | 4.0          | 4.0          | 4.0            | 4.0            |
| <b>Total: Second Level</b>           | <b>208.2</b> | <b>241.8</b> | <b>284.3</b> | <b>299.8</b> | <b>305.0</b> | <b>343.3</b>   | <b>384.7</b>   |
| <b>Total: First and Second Level</b> | <b>734.9</b> | <b>788.2</b> | <b>832.6</b> | <b>882.3</b> | <b>958.8</b> | <b>1,081.9</b> | <b>1,215.6</b> |

21

32. As might be expected, the results show a rapidly increasing gap between the high and low population-based estimates based on enrolments. For example, the difference in first-level enrolments (where participation rate differences are irrelevant) are 16,600 in 1981, 66,500 in 1986, 131,000 in 1991 and 203,000 in 1996. This illustrates how demographic projections need frequent re-calculation in the light of census data etc., if the areas of very high uncertainty are to be reduced.

33. For the second level, participation rate assumptions are of great importance, especially for the 1976-86 period. For example, the differences between high and low population-based estimates of enrolments, assuming similar participation rates, is about 3,000 in 1986. However, the difference due to variation in the assumptions about participation rates, holding population constant, is approximately 20,000 in 1986. The reason for this is that migration is almost the only source of population differences in the 11 to 18 age group until 1986; however, for 1986 to 1996 variations in the birth rate become more important with the result that projected populations diverge much more rapidly.

34. In the absence of a census in 1976, accurate measurement of past participation ratios becomes progressively more difficult, and thus any projection of future participation rates and enrolments become subject to a greater degree of uncertainty.

35. When the projections of Table III.3 are translated into annual rates of change, the high population figures look more "normal". For example, at the first level the actual rate of growth is just over 1% per annum for the 1971 to 1974 period. The low population projection shows the system settling down to a rate of growth of 0.6% to 0.7% per annum from 1976 onwards. The high population projection gives an acceleration to 1.2% per annum 1976-81; 2.3% per annum during 1981-86; 2.5% per annum from 1986 onwards. Projections up to 1981 worked out by the Department of Education coincide almost exactly with the HpHe projections of Table III.3 for first and second level. As neither the Department nor anyone else has made projections beyond this, there are no figures for the period 1981-96 with which to compare the results of this study.

36. For the second level *all* projections show growth rates of 1% per annum or less during 1976-86, compared to observed rates of growth of over 5% per annum between 1971 and 1974, and a forecast rate of 5% to 6.4% for 1971 to 1976. For the 1986 to 1996 period enrolment grows at approximately 2.4% per annum (high population) and 0.8% per annum (low population).

37. To the extent that the rate of growth of enrolment puts a strain on the system through high demands for extra teachers and buildings then it would appear that the second level has almost passed through its most difficult period. (However, this statement must be tempered by the fact that there is a commitment to consolidate small secondary and vocational schools into comprehensive or community schools. This will obviously entail new buildings.) At the first level, however, there is the possibility of unprecedented rates of expansion in the 1980s.

## Chapter IV

### ENROLMENT PROJECTIONS AND THE DEMAND FOR TEACHERS

38. In this chapter, the implications of the enrolment projections for teacher requirements, and the relationship of current and likely future trends in the supply of teachers to the demand for teachers are examined.

39. *Teacher Requirements:* The analysis is confined to full-time qualified teachers. (Part-timers' hours are often difficult to quantify accurately and the same teacher may appear as a part-timer on the return of more than one school. Furthermore, staffing requirements and public expenditure commitments are more directly related to full-time teacher requirements.)

40. From the enrolment projections in Table III.3 requirements for the stock of teachers from 1976 onwards are derived. For this it is necessary to assume certain pupil/teacher ratios. The assumed ratios for Secondary schools is 19:1 and for Vocational schools 13:1.<sup>1</sup> These are close to the ratios prevailing since 1970-71 for full-time teachers. For Community/Comprehensive schools a ratio of 17:1 is assumed; this is somewhat higher than the actual ratio (which has, however, moved up from under 15:1 in 1968-69 to about 16:1 in 1973-75). As these schools build up to full enrolment levels, the initial pupil/teacher ratios might be expected to fall somewhat.

41. For national schools the pupil/teacher ratio has been approximately 32:1 in recent years. There is a policy commitment to reduce class size

<sup>1</sup>These pupil/teacher ratios are based on the recent trends of the ratios of full-time pupils to full-time teachers. In so far as secondary schools avail fully of their teachers quotas the ratios in these schools are likely to be lower in the future.

(specifically to abolish classes of over 45 pupils);<sup>1</sup> the achievement of this objective has, however, been somewhat slower than expected due mainly to the introduction of a three-year course for national school teachers in 1974. Given this policy commitment, and given the uneven distribution of class sizes in national schools (because of the existence of many fairly small rural schools) a pupil/teacher ratio of 30:1 is assumed for projection purposes. As far as can be judged, this would still leave many classes in the 40 to 45 range, which is still quite large. For the rest of the first level, non-aided primary and special schools, pupil/teacher ratios of 20:1 and 12:1 respectively are assumed. Between them, these sectors account for only 5% of first-level enrolments, so their impact on teacher requirements is small—apart from special facilities for training teachers for special schools and classes.

42. Having arrived at required stock of teachers, the annual flow of recruitment necessary to produce the changes in the stock were estimated. The estimate of new recruitment required had to be based on some assumptions about the wastage rate of the existing stock. This is difficult to forecast because of the numbers of married women who leave teaching and subsequently return on completion of their families. For the first level it was assumed (as by the HEA in its report on teacher training) that there would be 3% net wastage per annum. This is close to recent rates of wastage. For the second-level wastage has ranged from 2.4% per annum during 1963-64 to 1966-67, to 4.6% per annum during 1969-70 to 1973-74, and over 5.5% in 1972 and 1973. In general, a higher wastage rate for secondary (and many vocational) teachers might be expected because their degrees should give them more mobility. Consequently, a 5% per annum net wastage was assumed in projecting second-level teacher requirements. However,

<sup>1</sup>See statement by the Minister for Education in Dáil Éireann, 23 October 1973: *Parliamentary Debates, Dáil Éireann*, Vol. 268, No. 3, Col. 378: "... as from the commencement of the 1973-74 school year the enrolment in any one class must not exceed 45 pupils. It is not of course satisfactory that we should be envisaging classes of 45 pupils in our national schools, but we shall continue our efforts to improve the situation progressively so that this obstacle to the full realisation of the objectives of education at the primary level may be cleared from the path of teachers and pupils." In September 1973 (i.e. the beginning of the 1973-74 school year) there were still 1,492 classes of over 45 pupils, containing a total of 69,349 pupils. See *An Roinn Oideachais, Tuascail Staitistiúil, 1972-73/1973-74*, Table 12, p. 15.



the net wastage rate, in so far as it is a function of the rate at which married women leave and then return to the teaching profession, is to some extent under the control of the Department of Education (which can alter the balance of incentives to potential re-entrants).

43. The annual required inflows are the sum of expansion and replacement (net wastage) requirements, plus an allowance for the non-aided and other sectors (who recruit from the pool of available teachers) and an allowance for 350 first-level teachers per annum who should get in-service training (in line with the HEA's assumptions).<sup>1</sup>

**TABLE IV.1**

**Projected Requirements for First-Level Teachers, 1971-86  
(Annual Averages)**

|                      | 1971-76 | 1976-81 | 1981-86 | 1986-91 | 1991-96 |
|----------------------|---------|---------|---------|---------|---------|
| Low Population (Lp)  | 989     | 742     | 779     | 793     | 808     |
| High Population (Hp) | 989     | 854     | 1,132   | 1,294   | 1,422   |

*Note:*—Assumptions (i) 30:1 pupil/teacher ratio in national schools.  
(ii) 3% per annum net wastage.  
(iii) 350 teachers in in-servicing training, plus recruitment to non-aided and special schools, require 100 teachers per year.

<sup>1</sup>See H.E.A. *Report on Teacher Education*, 1970. The HEA's projected first-level enrolment for 1981 was 635,000, considerably higher than any of the projections made in the present study. With a pupil/teacher ratio of 33:1 this implied a first-level teaching force of 19,250, of whom 350 (i.e. 1.8%) would be undergoing in-service training at any given time. The present study assumes a constant requirement of 350 for in-service training; our alternative assumption would have been 1.8% of the teaching force. However, the differences in recruitment needs which result from the latter, more complicated assumption, are trivial: for example, the 1976-81 recruitment needs assuming low-population growth and a 350 in-service training requirement is 779; assuming low population growth and a 1.8% in-service training requirement, the annual recruitment need is 777.

44. The results for the first level are summarised in Table IV.1. Only two projections are given, one for each of the population projections, as participation rates are constant for the first level. The figures for 1971-76 are unusually high because they assume a transition from a pupil/teacher ratio of approximately 32:1 in 1971 to 30:1 in 1976. To maintain a 32:1 ratio, recruitment would have to be 740 per annum. This compares, with the actual recruitment from training colleges of 711 in 1970-71, 620 in 1971-72, 718 in 1972-73 and 917 in 1973-74.

45. With the low population projection, the 30:1 staffing policy would imply little expansion beyond the 1977 output levels until 1981 (assuming output in 1971-76 as large as projected and suitable arrangements to compensate for the lack of graduates in 1976 due to the introduction of a 3-year degree course). The higher population projection requires significant expansion in the output of teachers by 1981 (and therefore of enrolment by 1977-78). In addition, it must be remembered that enrolments in teacher training will grow by 50% between 1974 and 1977 due to the 3-year course, assuming drop-out and failure rates do not change. The detailed figures (to 1981) for teacher-training enrolment implied by the population, enrolment and pupil/teacher assumptions are given in Chapter VI in the context of the third level as a whole.

46. For the second level there are four projections of annual demand or recruitment, corresponding to the four enrolment projections. The method employed is similar to that used to derive the demand for first-level teachers. The results are given in Table IV.2.

47. The results show that compared with recruitment in recent years (1,569 per annum), requirements will fall under all enrolment/population assumptions until 1986 and beyond. Only under the HpHe assumptions in the 1991-96 period will the recruitment into the second-level teaching force, need to be as high as it has been recently. It should be noted in addition that:—

- (a) the wastage rate assumed—5% per annum—is fairly high by historical standards and could fall, thus reducing new recruitment further;

**TABLE IV.2**  
**Projected requirements for Second-Level Teachers, 1971-1996**  
**(Annual Average Recruitment)**

|   | 1971-76 | 1976-81 | 1981-86 | 1986-91 | 1991-96 |
|---|---------|---------|---------|---------|---------|
| 1. Low Population, Low Enrolment (LpLe)   | 1,408   | 918     | 911     | 970     | 1,012   |
| 2. Low Population, High Enrolment (LpHe)  | 1,627   | 1,025   | 933     | 1,041   | 1,083   |
| 3. High Population, Low Enrolment (HpLe)  | 1,408   | 949     | 893     | 1,319   | 1,467   |
| 4. High Population, High Enrolment (HpHe) | 1,627   | 1,039   | 953     | 1,410   | 1,562   |

**Notes:**

(1) Actual recruitment 1971-74 was 1,569 per annum (gross).

(2) Assumptions used in deriving above figures:

(a) Pupil-teacher ratios: 19:1 Secondary, 13:1 Vocational, 17:1 Community/Comprehensive (all full-time only).

(b) Wastage rate, 5% per annum.

(c) Enrolments as in Table III.3.

(b) the results do not involve any significant extension of Walsh's figures as the population in 1996 aged 11 to 18 is largely given by pre-1986 births.

Of the total inflow of teachers to second-level education, a large majority comes from the universities (via Higher Diploma in Education courses in most cases). Relatively small numbers are from specialist Department of Education courses for technical subjects in vocational schools (between 100 and 120 in recent years). The numbers enrolled in H.Dip. in Education courses in recent years (over 1,500) together with the high demand for such courses (places have had to be rationed during the past two years) indicates that the supply of trainee teachers for second level is more than adequate at the aggregate level. There is not sufficient information on whether or not the supply of various types of specialist teachers, or of honours graduates, is adequate.

48. Unless the enrolment rates rise much more rapidly than the

assumptions allow for, it will not be possible to find jobs for the present rate of output of H.Dip. in Education graduates in second-level education.

49. Finally, the total required stock of teachers is given in Table IV.3. It is clear from a comparison with Tables IV.1 and IV.2 that not only the size of the teaching force (and the number of enrolments), but also their rate of growth, is an important determinant of the annual demand for new teaching personnel.

**TABLE IV.3**  
**Projected Total Full-time Qualified First and Second-Level Teaching Force 1971-1996(b)**

|                | 1971(a)       | 1976          | 1981          | 1986          | 1991          | 1996          |
|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>1. LpLe</b> |               |               |               |               |               |               |
| 1st level(c)   | 15,235        | 17,250        | 17,830        | 18,500        | 19,140        | 19,760        |
| 2nd level(d)   | 11,992        | 15,517        | 16,129        | 16,403        | 17,019        | 17,689        |
| <b>Total</b>   | <b>27,227</b> | <b>32,767</b> | <b>33,959</b> | <b>34,903</b> | <b>36,159</b> | <b>37,449</b> |
| <b>2. LpHe</b> |               |               |               |               |               |               |
| 1st level      | 15,235        | 17,250        | 17,830        | 18,500        | 19,140        | 19,760        |
| 2nd level      | 11,992        | 16,508        | 17,350        | 17,590        | 18,268        | 19,077        |
| <b>Total</b>   | <b>27,227</b> | <b>33,758</b> | <b>35,180</b> | <b>36,090</b> | <b>37,408</b> | <b>38,837</b> |
| <b>3. HpLe</b> |               |               |               |               |               |               |
| 1st level      | 15,235        | 17,250        | 18,350        | 20,590        | 23,270        | 26,170        |
| 2nd level      | 11,992        | 15,517        | 16,240        | 16,555        | 18,693        | 21,010        |
| <b>Total</b>   | <b>27,227</b> | <b>32,767</b> | <b>34,590</b> | <b>37,145</b> | <b>41,963</b> | <b>47,180</b> |
| <b>4. HpHe</b> |               |               |               |               |               |               |
| 1st level      | 15,235        | 17,250        | 18,350        | 20,590        | 23,270        | 26,170        |
| 2nd level      | 11,992        | 16,508        | 17,466        | 17,774        | 20,046        | 22,510        |
| <b>Total</b>   | <b>27,227</b> | <b>33,758</b> | <b>35,816</b> | <b>38,364</b> | <b>43,316</b> | <b>48,680</b> |

**Notes:**

(a) 1971, actual figures.

(b) For assumptions see text and notes to Tables IV.1 and IV.2.

(c) First level including only national schools.

(d) Second level excludes "other" category: commercial, radio schools, etc.

**Chapter V**  
**SCHOOL BUILDING**

50. In this chapter the implications of projected enrolments for school building programmes are examined. It must be noted, however, that especially at the first level a large part of school building requirements is related to movements of population, obsolescence of existing buildings, and the amalgamation of small schools, rather than to the expansion of numbers at school.<sup>1</sup> Any calculations of building needs derived from Walsh's population projections must therefore be supplemented by information on other aspects of building requirements. The analysis in this chapter is confined to needs arising from enrolment expansion and the replacement of the existing stock of temporary, pre-fabricated classrooms.<sup>2</sup> Thus they are at the most an aid to policymakers who have already quantified some of the other sources of demand for new school buildings.

51. At the first level (excluding non-aided primary), building has been at a high level in recent years, compared with the change in enrolments; over 28,000 new places were provided in financial year 1973-74, and it was hoped to provide nearly 35,000 places in 1975 (though rapidly increasing costs may have cut this figure somewhat). Of these totals, permanent buildings accounted for about 85%.

52. There are at present approximately 65,000 first-level places in temporary buildings constructed in the 1965-66 to 1973-74 period, and as these are generally reckoned to have a life of about 10 years,

<sup>1</sup>See NESC Report No. 12, *Educational Expenditure in Ireland*, Ch. 3. For example, in 1974-75 about 10% of national school building was to meet expansion of enrolment.

<sup>2</sup>Estimates of the number of places in temporary buildings were made in NESC Report No. 12, *op. cit.*, Ch. 3.

they will require replacement over the 1976-86 period.<sup>1</sup> It is assumed that this gives rise to a replacement requirement of 6,500 per annum during the ten years 1976 to 1985.

53. The annual expansion in enrolments at first level is projected as follows: 1971-81, 3,600 Low Population, 6,800 High Population; 1981-86, 4,100 Low Population, 13,700 High Population.

54. Thus, total annual needs from expansion and from replacement of temporary buildings during 1976-86, and from expansion only (assuming no further temporary buildings need replacement) during 1986-96 is as follows for the aided first level:

|         |        |        |   |
|---------|--------|--------|---|
|         | Lp     | Hp     |   |
| 1976-81 | 10,100 | 13,300 | } |
| 1981-86 | 10,500 | 20,200 |   |
| 1986-91 | 3,900  | 19,400 | } |
| 1991-96 | 3,800  | 17,700 |   |

55. This may be compared with current (1975) buildings of about 30,000 permanent places per annum, of which less than 5,000 p.a. were needed to meet expansion. Quite clearly, a judgement has to be made about when the existing backlog of obsolete permanent buildings is likely to be cleared before a judgement can be made on whether the continuation of the current building rate of 30,000 places is adequate, and estimates must be made of likely population movements etc. In so far as the high population projection leads to rapid rates of expansion in the years following 1986, then during the 1976-86 period it would be hoped that all temporary structures would be replaced in order to avoid a large degree of "bunching" of requirements in the post 1986 period.

56. For the second level, it is difficult to obtain directly data on pupil places provided in recent years (especially for the secondary schools), and, therefore, to assess the current (1975) rate of building in relation to future years. A rough estimate may be made of temporary buildings in

<sup>1</sup>NESC Report No. 12, pp. 62-63.

the second level, namely, 30,000. This gives replacement requirements of 3,000 p.a. during 1976 to 1985.

57. The lowest second-level enrolment projection (LpLe) gives the following annual average rates of expansion in enrolments: 1976–81, 2,000; 1981–86, 1,000; 1986–91, 2,000; 1991–96, 2,000. For the highest projection (HpHe) the figures are: 1976–81, 3,000; 1981–86, 1,000; 1986–91, 8,000; 1991–96, 8,000.

58. The differences between the various projections are small (about 1,000 per annum at most) between 1976 and 1986. Total requirements from expansion and pre-fab replacement vary from 4,000 to 6,000 per annum under different enrolment assumptions in the 1976–81 and 1981–86 periods. After 1986 high population growth produces a considerably larger expansion demand for new places. As with the first level, 1976–86 is the time for replacement of pre-fabs if a "bunching" of building requirements is not to occur after 1986.

59. Enrolment expansion in 1971 to 1974 was approximately 11,000 per annum, and the building programme was probably in the region of 15,000 places per annum (it is known that some old schools were replaced and some small schools consolidated). Overall, the recent level of activity seems adequate to cater for expansion and urgent pre-fab replacements, but the speed with which existing small vocational and secondary schools are to be consolidated into new community schools is a variable whose value is unknown, and without which no final judgement can be made of overall building needs.

## Chapter VI

### THE THIRD LEVEL

60. Enrolments at the third level have tended to increase at a higher rate than the population in the 17 to 24 age groups. However, at this level enrolments are such a small proportion of an age cohort (generally less than 10%), and various manpower, financial and other considerations are so important that the connection between a population projection and the numbers participating at the third level of education is a weak one.

61. This chapter discusses in a general way the likely size and structure of third-level enrolments for a relatively limited period, using information from population projections, other sectors of the educational systems and some outside sources such as the Higher Education Authority.

62. The HEA in its progress report for 1974<sup>1</sup> published projections of university student numbers to 1981. The method used was based on "an extrapolation of the trend in first year numbers in the various courses, the trend being widened in most cases by the numbers following each course over the preceding three or four years. In the extrapolation, account is also taken of, *inter alia*, the number of pupils in the senior cycle of second-level education<sup>2</sup>, by *numerus clausus* or other form of quota restriction on entry to particular courses and any new accommodation due to become available within the period". The HEA's

<sup>1</sup>HEA *Progress Report 1974*, Stationery Office 1974, Chapter IV.

<sup>2</sup>The report does not give its projections of second-level numbers or of methods used to derive them, nor does it say whether it confined itself to looking at actual numbers in the second level.

projections are used for the universities, which account for about two-thirds of third-level enrolment.

63. The projections of student numbers in teacher training colleges are based on the projections of teacher demand in Chapter IV above. Finally, it is assumed that total third-level participation rates (i.e. percentage of age group enrolled) will increase at a similar rate to that of second level (17 and 18-year-olds). There is one projection for universities (based on HEA<sup>1</sup>), and two projections for teacher training (based on different population assumptions which affect the demand for first-level teachers). Finally, there are two residuals, representing the technological sector and the RTC's, NIHE's etc.

The various enrolment rates assumed are given in Table VI.1 below:

**TABLE VI.1**

**Participation Rates at the Third Level, 1976-81**

| Age/Year | 1971(a) | 1974(a)(b) | 1976(He) | 1981(He) |
|----------|---------|------------|----------|----------|
| 17       | 4.0     | 4.3        | 5.0      | 5.0      |
| 18       | 9.4     | 9.7        | 11.2     | 11.5     |
| 19       | 9.0     | 11.0       | 10.5     | 12.2     |
| 20-24    | 7.4     | 6.8        | 6.8      | 6.8      |

*Notes:*

(a) 1971 and 1974 figures are actual.

(b) the low participation assumptions for 1976 and 1981 are equal to the actual 1974 rates (except for the 19-year-olds where the 1974 figure appears to be unusually high).

Together with different population assumptions this gives the following set of enrolment figures:—

<sup>1</sup>*Op. cit.*, paragraph 29.

**TABLE VI.2**

**Total Enrolments at the Third Level 1976-81 under Various Population and Enrolment Rate Assumptions**

|          | LpLe   | LpHe   |        | HpLe   | HpHe   |
|----------|--------|--------|--------|--------|--------|
| 1971 (a) |        |        | 26,218 |        |        |
| 1974 (a) |        |        | 29,645 |        |        |
| 1976     | 33,600 | 34,800 |        | 33,600 | 34,900 |
| 1977     | 34,280 | 35,680 |        | 34,400 | 36,120 |
| 1978     | 34,960 | 36,560 |        | 35,200 | 37,440 |
| 1979     | 35,640 | 37,440 |        | 36,000 | 38,760 |
| 1980     | 36,320 | 38,320 |        | 36,800 | 40,080 |
| 1981     | 37,000 | 39,200 |        | 37,600 | 41,400 |

(a) 1971 and 1974 figures are actual.

Note: The population assumptions are similar to those used in Chapter II.

The enrolments for the whole third level are broken down into University, Teacher Training and "other" (largely technological). The teacher training is largely national teacher trainees, but includes an estimate for Vocational, Domestic Science and Physical Education of 800 per annum. Note that teacher training showed a large expansion over recent years because of the introduction of a 3-year course.

64. Table VI.3 shows four possible total enrolment projections, based on population and participation assumptions similar to those used to derive projections for the first and second levels. The breakdown between University, Teacher-training and Other, leaves the latter (largely Technological) as a residual. Independent projections of the demand for technicians and technologists would be a useful supplement to these figures and would help to indicate whether the overall size of the third level should be increased beyond the population and participation projections. However, such projections are beyond the scope of this report.

65. Obviously, within the constraints of any set of population and labour force projections, such as those made by Walsh, there are many

**TABLE VI.3**

**Third-Level Enrolments by Sector 1971-81**

*1. LpLe (Low Population, Low Enrolment)*

|                  | 1971 (a)      | 1974 (a)      | 1976          | 1977          | 1978          | 1979          | 1980          | 1981          |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| University       | 18,570        | 20,360        | 20,897        | 21,559        | 22,237        | 22,828        | 23,574        | 24,214        |
| Teacher-training | 1,787         | 2,268         | 2,983         | 3,253         | 3,285         | 3,315         | 3,345         | 3,375         |
| Other            | 5,861         | 7,017         | 9,720         | 9,469         | 9,437         | 9,497         | 9,401         | 9,411         |
| <b>Total</b>     | <b>26,218</b> | <b>29,645</b> | <b>33,600</b> | <b>34,281</b> | <b>34,959</b> | <b>35,640</b> | <b>36,320</b> | <b>37,000</b> |

36

*2. HpHe (Low population, High enrolment)*

|                  | 1971 (a)      | 1974 (a)      | 1976          | 1977          | 1978          | 1979          | 1980          | 1981          |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| University       | 18,570        | 20,360        | 20,897        | 21,559        | 22,237        | 22,828        | 23,574        | 24,214        |
| Teacher training | 1,787         | 2,268         | 2,983         | 3,253         | 3,285         | 3,315         | 3,346         | 3,375         |
| Other            | 5,861         | 7,017         | 10,920        | 10,869        | 11,038        | 11,297        | 11,401        | 11,611        |
| <b>Total</b>     | <b>26,218</b> | <b>29,645</b> | <b>34,800</b> | <b>35,681</b> | <b>36,560</b> | <b>37,440</b> | <b>38,321</b> | <b>39,200</b> |

(a) 1971 and 1974 figures are actual.

**TABLE VI.3—continued**

*3. HpLe (High Population, Low Enrolment)*

|                  | 1971 (a)      | 1974 (a)      | 1976          | 1977          | 1978          | 1979          | 1980          | 1981          |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| University       | 18,570        | 20,360        | 20,897        | 21,559        | 22,237        | 22,818        | 23,574        | 24,214        |
| Teacher training | 1,787         | 2,268         | 2,983         | 3,623         | 3,853         | 4,083         | 4,305         | 4,541         |
| Other            | 5,861         | 7,017         | 9,720         | 9,218         | 9,110         | 9,099         | 8,721         | 8,845         |
| <b>Total</b>     | <b>26,218</b> | <b>29,645</b> | <b>33,600</b> | <b>34,400</b> | <b>35,200</b> | <b>36,000</b> | <b>36,600</b> | <b>37,600</b> |

*4. HpHe (High Population, High Enrolment)*

|                  | 1971 (a)      | 1974 (a)      | 1976          | 1977          | 1978          | 1979          | 1980          | 1981          |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| University       | 18,570        | 20,360        | 20,897        | 21,559        | 22,237        | 22,818        | 23,574        | 24,214        |
| Teacher training | 1,787         | 2,268         | 2,983         | 3,623         | 3,853         | 4,083         | 4,305         | 4,541         |
| Other            | 5,861         | 7,017         | 10,920        | 10,938        | 11,350        | 11,859        | 12,201        | 12,645        |
| <b>Total</b>     | <b>26,218</b> | <b>29,645</b> | <b>34,800</b> | <b>36,120</b> | <b>37,440</b> | <b>38,760</b> | <b>40,080</b> | <b>41,400</b> |

Notes:

(a) 1971 and 1974, actual figures.

(b) Assumptions:

(i) Universities: HEA figures;

(ii) Teacher-training: derived from first-level enrolments and teacher demand (plus an estimate for other sectors);

(iii) Other: a residual equal to the difference between total enrolments and the University/Teacher training figures  
Total figures are as in Table VI.2.

37

possible approaches to projecting third-level numbers. In the absence of fuller details of policy as well as of population specifications, only one set of projections is made, which incorporates the minimum possible number of arbitrary assumptions. Numbers have not been projected beyond 1981 in the absence of HEA forecasts for the university sector.

## Chapter VII

### CONCLUSIONS

#### Some Economic and Financial Implications

66. In Walsh's original projections and in those in this report, the growth rates (1971-86) of population, labour-force and school-going age groups were as follows (all figures annual percentage growth rates).

|                                  | Walsh<br>Minimum | Walsh<br>Maximum | NESC High<br>Population |
|----------------------------------|------------------|------------------|-------------------------|
| (a) Total population             | 1.1%             | 1.6%             | 1.5%                    |
| (b) Total labour force           | 1.1%             | 1.3%             | 1.3%                    |
| (c) Population aged 0-19         | 1.0%             | 1.9%             | 1.8%                    |
| (d) Population aged 20-24        | 1.9%             | 2.6%             | 2.7%                    |
| (e) Enrolment 1st and 2nd levels | 1.1%             | —                | 1.9%                    |

The minimum figures correspond to the low population projections used in this report. The maximum figures (high fertility, high nuptiality, zero migration, except for the 20-24 age group, where immigration of children in 1971-75, not assumed by Walsh, is allowed for) leads to a slightly higher growth rate in the 20-24 age group.

67. It is clear from the above figures that in the low population projections the school-going age group (0-19) grows at a lower rate than the labour force, whereas for Walsh's and the NESC high population projections the growth in the school age groups is much higher than that of the labour force. Therefore, apart from any changes in educational policies and standards, and assuming that employment and the labour force do not grow at significantly different rates, the assumed rate of population growth can indicate a tendency for the real burden of educational services on the taxpayer to rise or fall. When account is

also taken of the assumption that participation rates will rise somewhat (the He assumption in this report), then enrolments grow at almost exactly the same rate as the labour force in the low projection, and at an even higher rate in the high projection.

68. The 20–24 age group contains most third-level enrolments, and on all the assumptions grows at a much faster rate (sometimes twice as fast) than the labour force. The assumption that third-level participation rates remain constant until 1986, involves a large increase in absolute numbers, and a further increase in the share of total public educational spending on this level, which has already risen from 7% to 13% in the past decade.

69. The overall judgement is that once the third level of education is included, and even without any increase in the quantity of resources per student beyond those implied by present policies, education is almost certain to account for an increasing share of national income, and employ an increasing share of the labour force.

70. In the absence of any forecasts of national income and employment it is not possible to say what education's share will be. Furthermore, expenditure projections run into difficulties because of inflation and uncertainty concerning growth in teachers' real incomes.

71. In making expenditure forecasts, therefore, it is necessary to use many simplifying assumptions. First, the forecasts are confined to the first and second levels, because of the varied cost-structure of the third level, which is not fully known (especially the universities). Second, it is assumed that relative expenditure for primary, secondary and vocational pupils remain at their 1970–71 to 1973–74 average levels, i.e. in the proportions of 1.0 to 1.75 to 2.8 per pupil. Third, it is assumed that expenditure per community/comprehensive pupil has a weight of 2.8 (i.e. equal to vocational) which is lower than the actual figure (nearly 3.6), on the grounds that once enrolments have built up in the schools and once equipment is fully provided, costs should decrease. Fourth, enrolment for each year is taken and the weights already mentioned are used, to compute an index of expenditure, letting the 1971 figure equal to 100.

72. This gives the following table showing movements in real public *current* expenditure implied by the enrolment projections. Capital spending cannot be included because it is partly related to factors outside the scope of this report, such as population movements and obsolescence.

**TABLE VII.2**

**Indices of Real Public Current Expenditure at the First and Second-Level implied by Population and Enrolment Projections**

|   | 1971  | 1976  | 1981  | 1986  | 1991  | 1996  |
|---|-------|-------|-------|-------|-------|-------|
| 1. Low Population, Low Enrolment (LpLe)   | 100.0 | 117.4 | 121.3 | 125.6 | 130.5 | 135.6 |
| 2. Low Population, High Enrolment (LpHe)  | 100.0 | 122.1 | 126.4 | 130.9 | 136.1 | 141.3 |
| 3. High Population, Low Enrolment (HpLe)  | 100.0 | 117.4 | 126.8 | 134.3 | 151.7 | 171.8 |
| 4. High Population, High Enrolment (HpHe) | 100.0 | 122.1 | 129.8 | 138.7 | 157.9 | 178.4 |

*Note:* Derived from enrolments weighted by relative cost (1971–74 levels).

73. It must be emphasised that the above table shows only *requirements* implied by the enrolment increases in order to keep real expenditure per pupil constant at its 1971 level. In fact, real expenditure per pupil over most of the educational system has risen in the 1971–76 period because of large increases in capitation grants (most of this increase took place in 1975–76), and because vocational and technological education also obtained increased resources in relation to their enrolments over much of the period. Therefore, if the maintenance of existing standards of real expenditure per pupil was cast in contemporary (1976) terms, the indices in the above table would be significantly higher throughout. However, 1971 is chosen as a base, even though it is somewhat overtaken by events, in order that it may be consistent with the other projections made in this study.



74. Table VII-1 indicates much more rapid increases in real current expenditure requirements in 1971-76 than in 1976-86 or 1986-96 (especially on low population projections). In the 1971-76 and 1976-81 periods, assumptions about participation rates generate relatively large variations in expenditure. After 1981 however, differences in population assumptions (measured by comparing lines 1 and 3 or lines 2 and 4) eventually become the major source of differences in expenditure. (These trends are similar to those apparent in Table III-3 which gives the enrolment projections.) It must be noted that no allowance is made for increases in teachers' real incomes. This is because no projections have been made of the *per capita* economic growth rate, in which presumably teachers would share. However, while economic growth would entail higher real spending (for teachers' salaries) than shown above, it would also (at given tax rates) be accompanied by higher real tax revenues, so the omission of growth rates is in some measure self-correcting.

#### *General Conclusions*

75. Turning from expenditure projections which are of necessity difficult to make directly, the main implications of Walsh's study for education can be examined briefly.

76. Overall, the 1971-76 period will have been one of rapid growth of first and second-level enrolments compared to subsequent periods. Depending on population growth, total enrolments should grow at between 2.1% and 2.5% p.a. By comparison total enrolments should grow at between 0.6% and 0.7% per annum in the 1976-86 period given Walsh's low population growth assumptions and low estimates of participation rates for the over 15 age group. Given high population and participation assumptions, total enrolments are projected to grow at 1.2% per annum between 1976 and 1981 and at 1.7% per annum between 1981 and 1986. Only after 1986 (and then only on high population projections which continue to use Walsh's "high" assumptions) is the enrolment growth rate likely to approach the 2½% annual growth rate of current and recent experience.

77. This emphasis on overall rates of growth is the easiest way to summarise the projections in a way which is relevant to policy, because it is rates of growth which ultimately dictate the need for expanded

teacher-training and school building programmes. Of course, the population and enrolment projections are not complete indicators of need: population movements, changes in educational standards, availability of finance, etc., must all be specified before a complete forecast can be made.

78. The reasons for the recent high growth rates are not only demographic. They are also due to policy changes such as the abolition of fees at the second level and the raising of the school-leaving age to 15. In addition, there is evidence of considerable net immigration in the under 15 age group. This is not projected beyond 1976, but it will have its effects on the population in various older age groups in the years to 1996.

79. Given that the rate of growth of enrolments is likely to decrease (on all reasonable assumptions) this means that the demand for additions to the teaching force is likely to fall. It has been shown (Ch. IV) that this is likely to be an important factor at the second level, and that the present annual enrolment rate of H.Dip. in Ed. students (over 1,500) is well in excess of the projected recruitment rate for teachers. For the first level the problem is relatively insignificant because it is government policy to make some reductions in class sizes and in the pupil-teacher ratio, and because the transition from high to low enrolment growth rates is likely to be much less severe.

80. For school building programme, the strain of providing for rapid enrolment growth has led to a large stock of pre-fabricated temporary classrooms (Ch. V). During the 1976-86 period these will need replacement, and the comparative lull in the need to provide for additional enrolments will give an opportunity which should not be missed. Otherwise, a return to more rapid growth in enrolments after 1986 (if high population projections are verified) will lead to renewed difficulties with school building programmes.

81. At the third level attention has been confined to the 1976-81 period where the Higher Education Authority's forecasts of university enrolments are combined with various population, participation, and teacher-training projections (Ch. VI). The results are incomplete

## NATIONAL ECONOMIC AND SOCIAL COUNCIL PUBLICATIONS

| <i>Title</i>   | <i>Date</i> |
|--|-------------|
| 1. Report on the economy in 1973 and the prospects for 1974                                | April 1974  |
| 2. Comments on Capital Taxation Proposals  | July 1974   |
| 3. The Economy in 1974 and Outlook for 1975  | Nov. 1974   |
| 4. Regional Policy in Ireland: A Review  | Jan. 1975   |
| 5. Population and Employment Projections: 1971-86  | Feb. 1975   |
| 6. Comments on the OECD Report on Manpower Policy in Ireland                               | July 1975   |
| 7. Jobs and Living Standards: Projections and Implications                                 | June 1975   |
| 8. An Approach to Social Policy  | June 1975   |
| 9. Report on Inflation   | June 1975   |
| 10. Causes and effects of inflation in Ireland   | Oct. 1975   |
| 11. Income Distribution: A Preliminary Report  | Sept. 1975  |
| 12. Educational Expenditure in Ireland   | Jan. 1976   |
| 13. Economy in 1975 and Prospects for 1976   | Oct. 1975   |
| 14. Population Projections 1971-86: The Implications for Social<br>Planning—Dwelling Needs | Feb. 1976   |
| 15. The Taxation of Farming Profits  | Feb. 1976   |
| 16. Some Aspects of Finance for Owner-Occupied Housing                                     |             |
| 17. Statistics for Social Policy   |             |

and they need to be supplemented by more information about the effects of policy changes, especially in the technological sector.

82. Finally, the range of uncertainty is greater when trying to project the implications of Walsh's study for education, than it is for housing, health etc. This is because the population in the young age groups varies very rapidly with different projections of births, and these projections are inherently difficult to make at a time of rapid demographic change such as the present. In addition, accurate information on net migration by age is almost impossible to obtain in the post-1971 period; however, there is little doubt that for the under 15 age group it has been strongly positive. The problem of estimating population change by age group is made much more difficult in the absence of censuses at regular intervals.