An Roinn Oideachais
Department of Education

Developing a Teacher Demand and Supply Model for Ireland 2021-2038
A Technical Report

Updated May 2021

Contents

Foreword

In November 2019 the Department of Education published the first Technical Report, Teacher Demand and Supply in Ireland 2020-2036. Since then, communities here in Ireland and across the world have been seeking to address the many challenges of the Covid-19 global pandemic, an unprecedented event in modern times. For the education sector, the Covid-19 emergency and associated restrictions have required innovative responses and flexibility on the part of all stakeholders. Schools have faced added difficulties in many aspects of their day-to-day operation, supporting students and staff to cope with new ways of learning and teaching in the online environment. During this period the formal structures put in place to address teacher supply issues and develop appropriate responses have remained in place and we continue to see the collaboration of education partners including higher education institutions, school management bodies, the Teaching Council and the Higher Education Authority towards the goal of ensuring a sufficient supply of teachers to meet the needs of our students and schools.

The Technical Report remains a working document which, it is intended, will be periodically updated to reflect changes to the teacher demand and supply model. Accordingly, in this updated version of the report, a number of changes have been made including alterations to the pupil teacher ratio at both primary and post primary level and updated pupil enrolment projections. These and other factors have led to revised projections of demand and supply of teachers across both sectors, with projections extended out from 2036 to 2038.

The Technical Report will remain a focus point for discussion and consultation between the Department, relevant agencies and education partners. We will continue to develop the assumptions and understandings feeding into the analysis to ensure that they accurately reflect the system drivers of teacher demand and supply. The considerations and observations of all relevant education partners will inform future direction as this work progresses so that we can develop and maintain a robust process for the effective projection of teacher demand and supply across the school system into the future.

The challenges at post primary level are complex for a number of reasons, including the subject specialisms of teachers and the subject choices of students. Separate to the Technical Report, an analysis of post primary data is continuing with the ultimate aim of accurately projecting teacher demand and supply at a subject level across the system. The outcome of that analysis will be the subject of further consultation between the Department and the education partners.

We have made significant progress in dealing with the challenges of teacher supply since the publication of the first Technical Report. This has been possible because of the continuing collaboration with and between the education partners. I would like to extend our thanks to the various stakeholders for their cooperation in this work, particularly in light of the Covid-19 emergency. I look forward to continued cooperation over the coming period as we continue to work together to ensure that the needs of our children and school communities are fully met.

Seán Ó Foghlú
Secretary General

Department of Education
Chair of Teacher Supply Steering Group

Executive Summary

- Primary teacher demand and supply

  - The demand for primary teachers is projected to decrease most years up until 2026[1], after which it will increase to 2038 (the final year projected). This trend will be driven by decreasing retirements and enrolments out to 2027 and 2034, respectively.
  - It is estimated that approximately 1,750 primary teachers per annum will register with the Teaching Council out to 2038.
  - High levels of supply compared with modest demand will lead to a projected over-supply of primary teachers out to 2035, after which the demand is projected to overtake the supply.

- Primary teacher absences and substitution

  - The number of absence days in primary schools increased between 2016 and 2018. The decrease between 2018 and 2019 is a result of school closures in the 2019/20 academic year related to Covid-19.
  - Maternity related leave, family related leave and certified sick leave accounted for the most absences in the primary system in 2019.
  - The number of substitutes used at primary level decreased from 16,806 in 2018 to 15,702 in 2019, primarily due to Covid-19. The substitute figures include a large number of irregular substitutes, i.e. those working less than 10 days in the academic year.

- Regional projections of primary teacher demand

  - Primary pupil enrolments are projected to decrease by over 130,000 between 2019 and 2036 (the final year projected for regional enrolments). The largest enrolment decreases are projected to be in the South-West, West and Dublin NUTS 3 regions.
  - All regions are therefore projected to experience a decline in the demand for teachers based solely on demographic changes. The decline in demographic related demand will peak in 2032 in Dublin, but continue for the life of the model. The Mid-East, Midlands and Border will however experience an increase in this demand from the early 2030s onward.

- Post-primary teacher demand and supply

  - The demand for post-primary teachers is projected to follow a largely downward trend out to 2032. While retirements are projected to increase steadily out to 2038, the demand associated with changing enrolments is projected to decrease from 2024 onward, although the rate of decrease will slow from 2032.
  - The supply of post-primary teachers registering with the Teaching Council is projected to increase to 2024 (the latest year based on current enrolment

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[1] Note: throughout this report the year refers the academic year beginning in that year. For example, 2018 refers to the 2018/19 academic year and 2019 refers to the 2019/20 academic year

data), and after this it is assumed that the supply will plateau at approximately 1,900 per annum.

- Post-primary teacher absences and substitution

  o The number of absence days in post-primary schools increased between 2016 and 2018. The decrease between 2018 and 2019 is a result of the school closures in the 2019/20 academic year related to Covid-19.
  o Maternity related leave, certified sick leave and family related leave accounted for the most absences in the post-primary system in 2019.
  o The number of substitutes used at post-primary level decreased in 2018 and again in 2019. Similar to the primary system, the number of substitutes working at post-primary level in 2019 was still high and can be partially explained by the presence of a large number of irregular substitutes, i.e. those working less than 10 days in the academic year.

- Regional projections of post-primary teacher demand

  o Post-primary pupil enrolments are projected to increase by over 30,000 between 2019 and 2024, before decreasing by over 75,000 up to 2036. The Dublin region is projected to experience the largest increase in post-primary enrolments out to 2024 and afterward the largest decrease out to 2036. The Mid-East and South-West are also projected to experience decreases of over 10,000 enrolments between 2024 and 2036.
  o All regions are therefore projected to experience a decline in the demand for teachers based solely on demographic changes from 2024 onward. Across most regions it appears that this decline will have peaked in the early 2030s and will be reversing by 2036. In Dublin however the projections suggest that the decline will peak in 2028, reverse until 2030 before declining again out to 2036.

1. Introduction

(i)   Background

In recent years the education partners, including school management bodies, teacher unions and school leaders, have reported challenges being experienced by schools across Ireland in recruiting teachers. At post primary level, management bodies have reported shortages of teachers of STEM subjects, Irish, modern foreign languages and home economics, as well as the recruitment of substitutes more generally, while at primary level the recruitment of substitute teachers is the most challenging issue.

The first Technical Report, Teacher Demand and Supply in Ireland 2020-2036, detailed the challenges for school and this report continues that work with the latest available data to underpin projections for teacher demand and supply to 2038. As with the initial Technical Report, this report provides a comprehensive overview of the issues involved and sets out an approach to the work necessary to further develop a model for achieving a better balance between teacher supply and demand in the medium to long term. The teacher supply structures put in place to oversee this work and the implementation of the Teacher Supply Action Plan continue.

(ii)   Key factors that impact on teacher supply and demand

Pupil demographics is a key driver for teacher demand and the key factor in developing the medium and long term projections included in this report. Primary enrolments peaked in 2018 and are projected to fall by 110,000 to 2034 (under the M1F2 scenario, see appendix 1). At post primary level enrolments will increase by 31,000 approximately between 2020 and 2024, before decreasing by 48,000 approximately to 2038 (M1F2 scenario). It is important to note also that the proportionate change in enrolments will vary across regions[2].

Career opportunities for teachers have increased due to the increasing number of permanent full-time positions created in Ireland in recent years. The consequence of this means that some schools have been experiencing challenges in hiring teachers to fill temporary or substitute roles but also in certain subject specialisms in post-primary. With economic growth there also are increased opportunities for graduates, particularly from STEM and language disciplines, to work in sectors other than education, which impacts on the number of graduates available to enter the teaching profession.

Policy Development has also affected the demand for and supply of teachers. This includes new models for the allocation of teachers designed to meet the needs of pupils with special educational needs and allocations under the DEIS programme to support the most disadvantaged learners in the system. Alongside these developments there has been ongoing curriculum reform at all levels, including the introduction of new subject specialisms

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[2] Regional Projections of full-time enrolments Primary and Second Level, 2019-2036 (DoE 2019)

for Leaving Certificate; new approaches to pedagogy through embedding of digital technologies and increased focus to support leadership in schools. Many of these policies are supported by accompanying professional development to support teachers and school Principals to embed change at school level. Other policy developments include changes in the duration of initial teacher education programmes, an increased demand for job sharing and career breaks, the introduction of new or enhanced statutory leave, and changes to the staffing schedule, all of which can impact on the demand for and supply of teachers. Other recent supply side measures include the development by the HEIs of new undergraduate post primary ITE programmes as well as upskilling programmes for registered post primary teachers in targeted subjects.

Interventions to address the challenges to schools arising from the Covid-19 emergency have also had consequences for teacher demand and supply. These include the nationwide expansion of the primary substitute teacher supply panels, new arrangements in place for job-sharing teachers which allow them for the first time to cover short term substitutable vacancies in addition to their usual work pattern and arrangements for NQTs qualified outside Ireland to undertake their induction in the State, on an exceptional basis.

(iii)   Role of the Department and other stakeholders on teacher supply

The supply of teachers depends primarily on the numbers of graduates from programmes of initial teacher education (ITE) provided by state funded higher education institutions (HEIs) and one private provider. Student intake numbers to primary ITE programmes, in the state funded HEIs, is determined by the Department. However, a similar arrangement does not apply to the post primary ITE providers.
The HEIs are responsible for the academic accreditation of ITE programmes. At post-primary level, the HEIs also determine the numbers of students undertaking ITE programmes generally, as well as the numbers entering particular subject specialisms in accordance with the funding and governance arrangements in place.

The Teaching Council accredits ITE programmes in accordance with approved standards[3]. It maintains the State's register of teachers and operates an application process for the registration of Irish ITE graduates. All teachers wishing to teach in recognised schools must meet the professional registration standards and criteria set by the Council. The Council also has responsibility for the recognition of out of State qualifications for teaching.

At local level, it is a matter for school management to determine the required subject specialisms of the teachers in the employment of the school/ETB, having regard to curricular demands and the needs of the student cohort, and to deploy teachers as it sees fit based on the overall allocation of teachers. Local management decisions, such as the granting of career breaks and job-sharing arrangements, also have a bearing on the demand for teachers.

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[3] https://www.teachingcouncil.ie/en/news-events/latest-news/ceim-standards-for-initial-teacher-education.pdf

(iv)   Collaborative response to teacher supply issues

Consultation and collaboration continues through the work of the teacher supply structures with all relevant stakeholders and agencies across the education system to inform this work.

There are many variables that impact the supply of and demand for teachers. These include: pupil demographics, teacher leave/work patterns (e.g. career breaks), the number of new graduate teachers, number of retirees and resignations from the profession, adjustments to the pupil teacher ratio, geographical location, mobility of teachers across jurisdictions and across other professions, the introduction of new subject specialisms and the perceived attractiveness of the teaching profession can all impact supply. This demonstrates the complexity of managing teacher supply and the challenges involved in forecasting demand with acceptable accuracy.

The Teacher Supply Steering Group, established to oversee the work on teacher supply, continues its work with particular focus in the following priority areas:

a. Data and research to support teacher supply planning.
b. Policies and arrangements for schools and teachers that impact on teacher mobility/supply.
c. Higher Education: policy, provision, funding and support.
d. Communications and promotion of the teaching profession including possible development of a portal for teacher substitution.

The Steering Group is supported by a the Teacher Supply Implementation Group and a number of working groups, including the Data Working Group which has overseen the development of this report. The Group comprises members from the Department's senior management, with nominees from the Irish Universities Association, the HEA, the Teaching Council, ETBI, and primary and post primary school management bodies.

(v)   Data Working Group Technical Report

As part of its role, the Data Working Group was asked to identify the key factors that impact upon the demand for and supply of teachers, the data sets required to analyse each of these factors and the various owners of the data. It became apparent to the Group at an early stage that significant data to support development of a teacher supply planning model existed but that this data had been collected for a variety of purposes other than teacher supply (e.g. to facilitate payment of salaries and pensions, to support the planning of school inspections) or was held in bodies outside the Department (e.g. individual HEIs, the Teaching Council, the HEA). Accordingly gaps in data and access to data were significant issues from the outset. The Department's Statistics Section, working as part of the Data Working Group, has conducted extensive analysis to produce this updated technical report, which has provided a continuing opportunity to examine the interlinking elements of teacher supply. This work involved the identification of datasets and accessing, refining and

interpreting the available data. The outcome of that analysis is now presented in this technical report.

Changes to the first version of the Technical Report include the use of a reduced PTR at both primary and post primary levels. The Report also assumes a new scenario for pupil projections (M1F2 instead of M2F2 see appendix 1) and is updated throughout using the latest data as appropriate. The approaches taken to certain variables have also been amended (e.g. to the estimate of teacher resignations and to estimates of graduates from future ITE programmes). Projections of demand and supply are now made to 2038.

(vi)   Aim of data analysis

The ultimate aim remains to put in place a model to project, as accurately as possible, the demand for suitably qualified teachers to meet the needs of the students in all our schools into the future which will then allow the system to respond to ensure that this demand will be met.

With regards to the estimates of retirements it should be noted that the Department is undertaking work to further develop an understanding of retirements in the education sector generally.

The aim of the report is to provide a framework for modelling teacher demand and supply at primary and post-primary levels over the coming years. It is intended to form the basis of a Teacher Workforce Planning Model that will inform the direction and policy of the Department and all relevant agencies and stakeholders in the context of their role in teacher supply. The potential impact of policy levers has not been examined in the report, although the model can be used for scenario testing in the future to assess various policy levers that might impact on demand and supply. It is also important to note that the findings in this report are based on the best available data at the time of preparation. As improved data becomes available it will be fed into the model in order to strengthen the findings.

2. The teacher demand and supply model

The teacher demand and supply model draws on a number of factors which impact the need for teachers. The factors which create a demand for new teachers are: projected changes in pupil numbers at primary and post-primary level (nationally and regionally), with consequent changes in allocated teacher numbers; and teacher retirements, resignations and career breaks. On the supply-side, there is the number of graduates from under- and post-graduate initial teacher education programmes who register with the Teaching Council. The demand and supply model for a given school year is summarised below.

Change in allocated teacher numbers (arising from change in pupil numbers)

+ teacher retirements + teacher resignations

− new Teaching Council registrations

= projected teacher gap

While other factors like secondments, job-sharing and various statutory leave arrangements also have an impact, the demand such movements create is offset to some extent if and when the relevant teachers return to their full-time posts. Factors which are included and excluded are discussed in more detail throughout the report. The regional dimension of the model is also presented for gross demand only, as regional estimates of retirements, resignations and Teaching Council registrations are not available due to data limitations.

The main outputs of the model are provided in Table 11 and Table 34. At primary level, the combination of a reduction in pupils and high levels of supply may create an oversupply of teachers which will peak during the middle of the 2020s, but gradually decline thereafter with an undersupply of teachers being projected by the middle of the 2030s (see Table 11). It is important to note that a certain amount of oversupply may be necessary to account for factors which were harder to estimate but may still have an influence, for example job-sharing.

At post-primary level, there is an increase in pupil numbers projected up to 2024 (see Table 34). This is offset by a projected yearly increase in the number of graduates emerging from the initial teacher education programmes until 2024. The impact of this is that an overall undersupply is only projected for 2021. After this, oversupply is projected to rise until 2032 and decline slowly up to 2038. Again, a certain amount of oversupply may be necessary to maintain balance in the system.

It is important to reiterate that the findings set out in this Report may be refined further following consultation between stakeholders and further analysis of available and new datasets as they emerge.

Please note that due to rounding the figures in some tables may not total precisely.

3. The demographic landscape

Population change in Ireland varies in line with rises and falls in migration, which is the driving force behind the large peaks and troughs witnessed in the year-on-year change over the past fifty years.

High periods of net inward migration tend to result in a high number of births, partly as a consequence of the higher number of women of child bearing years. Figure 1 shows how births peaked in 1980 with just over 74,000 births, then fell to a low point in 1994 with 48,200 births. Thirty years after the 1980 peak a second peak in births can be seen (when the females born in 1980 reached peak child bearing years) with 75,500 births in 2009, up from just 61,300 in 2005.

Births have been falling since 2009 with 61,016 babies born in 2018. Department projections show births reaching a low point in 2026 before slowly rising again.

Figure 1 Actual and Projected Births, 1970 - 2051
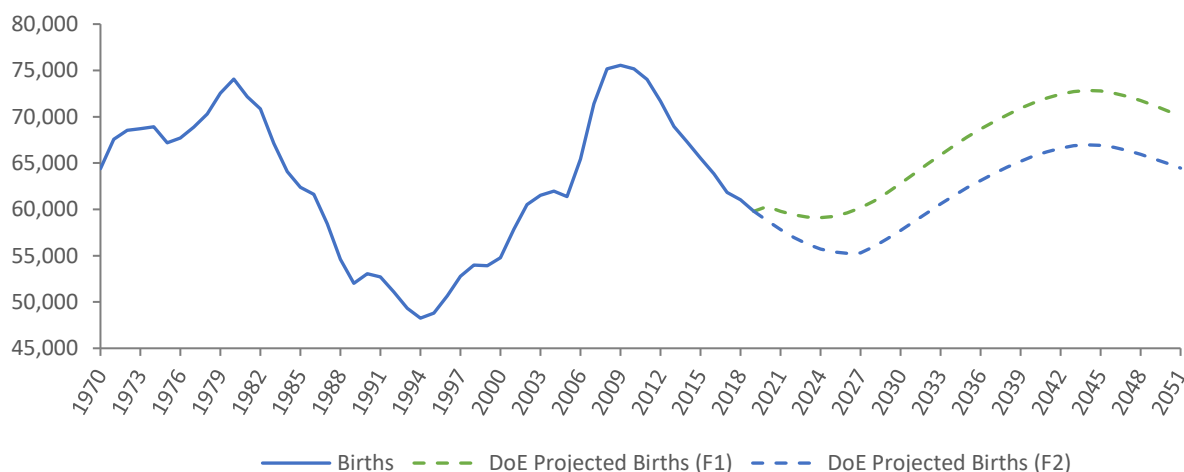
4. Primary sector

(i)   Projected enrolments

These demographic peaks and troughs have a direct impact on pupil enrolments. The most recent projections at primary level show enrolments are expected to have peaked in 2018 with 567,772 pupils.

Enrolments in primary schools in Ireland peaked in 2018 with 567,772 pupils and are now on a downward trajectory. In 2020 enrolments stood at 561,300 (projected). They are projected to fall over the coming years and under the M1F2 scenario will reach a low point of 451,971 by 2034. This is 109,329 lower than the 2020 figure. Enrolments will rise again thereafter and are projected to stand at 464,984 by 2038. Looking out further, the number of primary enrolments is projected to increase rapidly and reach 535,098 by 2051.

Should fertility remain at today's level (namely hold constant at 1.8 – the F1 scenario) enrolments will return to today's level of 560,000.

Figure 2 Enrolments in DoE recognised primary schools, actual and projected (M1F2 and M2F2), 2000-2051
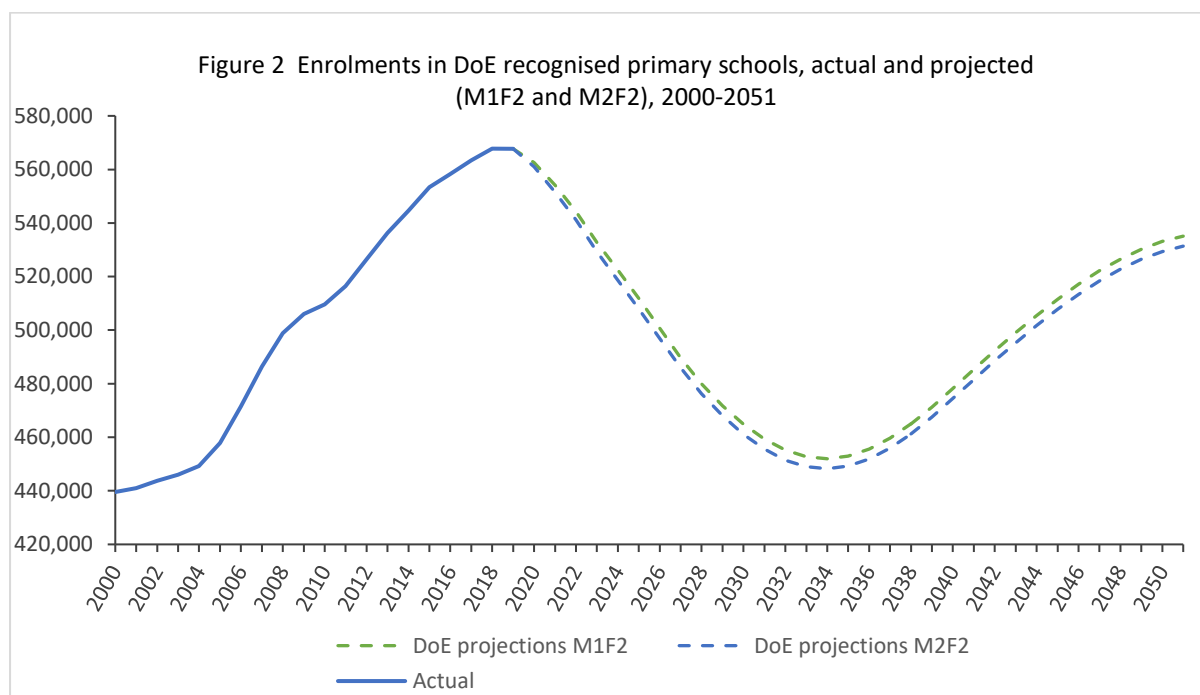
(ii)   Primary teacher numbers

Table 1 below shows enrolments and teachers in mainstream and special primary schools between 1998 and 2020 (every second year only), and 'teachers' refers to teaching posts.

Table 1 Change in primary pupils and teaching posts, 1998-2020 *(selected years)*

Year	Total enrolments	Mainstream teaching posts	Other teaching posts	Total teaching posts (WTE)	Pupil-Teacher Ratio
1998	452,533	17,042	4,458	21,500	21.0
2000	439,560	17,280	5,570	22,850	19.2
2002	443,720	17,807	6,893	24,700	18.0
2004	449,298	18,133	8,149	26,282	17.1
2006	471,519	18,909	10,625	29,534	16.0
2008	498,914	20,291	11,058	31,349	15.9
2010	509,652	20,604	11,885	32,489	15.7
2012	526,422	20,877	11,298	32,175	16.4
2014	544,696	21,419	12,194	33,613	16.2
2016	558,314	22,152	13,517	35,669	15.7
2018	567,772	22,747	14,594	37,341	15.2
2019	567,716	22,970	14,869	37,839	15.0
2020*	561,300			38,800	14.5
Change				17,300	-6.5

2020 pupil numbers are projected figures only (final numbers will be available in June 2021). The PTR of 14.5 in 2020 includes temporary Covid-19 emergency related posts.

Enrolments increased significantly over the twenty year period starting in 1998, standing at 561,300 (projected) in 2020 (+113,687). Over the same period the number of teachers increased from 21,500 to 38,800, a rise of 17,300. The pupil teacher ratio (PTR), which is calculated as total pupils divided by total teachers, fell over this period from 21:1 to 14.5:1 in 2020, although the 2020 PTR includes Covid-19 emergency related posts.

Note on the use of the 14.5:1 Pupil Teacher Ratio and teacher allocation mechanisms.

Both school and class size can vary across Ireland depending on a variety of factors. Some 12 per cent of pupils are in classes of 19 or fewer pupils while 20 per cent are in classes of 30 or more; the average class size across all primary schools in 2019 was 24.1. The difference between average class size and pupil teacher ratio (14.5:1) can be explained by the large number of non-mainstream posts, which tend to account for almost 4 of every 10 teaching posts in our schools (Table 1).

The primary PTR of 14.5 also excludes agreed policy changes arising from Budget 2021 that have resulted in changes to the mainstream staffing schedule for the 2021/22 academic year. These are expected to have a significant impact but cannot currently be factored into the model at this point in time.

Given the highly complex nature of the school system the allocation of teachers to schools in practice must take account of multiple complex issues such as:

- *staffing schedules*
- *provision for new, developing and small schools*
- *the staffing appeals process*
- *the teacher allocation process, which takes into account school enrolments from the previous year*

A working teacher demand and supply model remains in development in consultation with education stakeholders. This report represents a further step towards the model's development. Accordingly, the teacher projections in this report are not intended to be used for immediate short term planning or operational purposes. Once the working model is completed, in consultation with education stakeholders, it will provide projections which can be used for future operational purposes.

Combining projected enrolments with current teaching post numbers, and holding the PTR steady at 14.5:1, a basic estimate of future teacher demand can be derived.

Table 2 Projected number of primary teaching posts (PTR of 14.5:1), 2021-2038

Year	Projected enrolments	Projected teaching posts (WTE)	Change from previous year	% Change
2021	554,070	38,212	-588	-1.5
2022	544,280	37,537	-675	-1.8
2023	532,841	36,748	-789	-2.1
2024	522,401	36,028	-720	-2
2025	511,832	35,299	-729	-2
2026	500,689	34,531	-768	-2.2
2027	489,695	33,773	-758	-2.2
2028	480,004	33,104	-669	-2
2029	471,750	32,535	-569	-1.7
2030	464,868	32,060	-475	-1.5
2031	459,341	31,679	-381	-1.2
2032	455,187	31,393	-286	-0.9
2033	452,695	31,221	-172	-0.5
2034	451,971	31,171	-50	-0.2
2035	452,983	31,241	70	0.2
2036	455,614	31,422	181	0.6
2037	459,681	31,703	281	0.9
2038	464,984	32,068	365	1.2
Change			-6,732	

As can be seen in this simple model, the projected fall in enrolments on its own would result in 6,732 fewer teachers being required by 2038.

(iii)   Retirements

Primary teacher retirements can be estimated by looking at past patterns of the age at which teachers retire and projecting similar patterns forward into the future.

There are large variations in the number of teachers who retire each year, with 556 in 2016 and 813 in 2018 (see Table 3). The average number of retirements between 2016 and 2019 was just over 695. Looking at the age patterns of retirements we can see that retirements largely occur from 55 years onward, this being the earliest age at which voluntary retirement may begin.

Table 3 Primary retirements by age, 2016-2019

Age	2016	2017	2018	2019
54 or under	26	26	27	19
55	69	81	72	67
56-60	288	329	464	423
61 and over	173	231	250	236
Total	556	667	813	745

The Department's payroll provides data on the age of all teachers. By rolling this age profile forward the future age profile of all teachers can be estimated. Starting with 2019 as the baseline, factors of retirement were calculated for each single year of age and then applied to the projected number of teachers by single year of age each year to provide future estimates of retirements up to 2038. Table 4 presents the summary results. *Note: projected retirements in 2022 of 706 means 706 teachers will retire from the 2021 cohort of teachers and so are unavailable in 2022.*

As the age profile of retiring staff changes over the coming years the factors of retirement in the model will be updated accordingly, thus ensuring projections are up-to-date.

These estimated retirements will be fed into the teacher demand and supply model.

Table 4 Projected retirements of primary teachers by single year of age, 2022 – 2038
(selected years)

Year	Age at retirement												Total
	Under 55	55	56	57	58	59	60	61	62	63	64	65	
2022	31.5	64.8	55.2	72.3	78.5	92.9	115.5	53.9	35.9	25.8	22.9	56.4	706
2024	31.5	68.3	57.1	64.7	66.7	85.8	117.0	59.7	36.8	29.7	19.5	42.5	680
2026	31.5	53.8	50.0	68.1	69.0	76.8	99.4	55.1	37.2	32.9	20.0	48.9	643
2028	31.5	68.9	51.4	53.7	60.5	80.8	102.8	49.3	31.6	30.4	20.2	54.2	636
2030	31.5	98.1	69.4	68.7	62.1	63.7	90.1	51.9	32.7	27.2	17.2	50.0	663
2032	31.5	138.3	100.5	97.9	83.9	81.6	92.5	40.9	28.7	28.6	17.8	44.7	787
2034	31.5	178.2	135.4	138.0	121.5	116.2	124.9	52.4	29.4	22.5	15.6	47.1	1013
2036	31.5	199.7	169.3	177.8	163.8	163.8	180.9	74.7	39.8	28.9	16.0	37.1	1284
2038	31.5	202.1	183.6	199.3	204.7	211.0	243.9	105.2	57.6	41.1	21.6	47.5	1550

(iv) Resignations

A number of teachers leave the profession each year before they are eligible to retire (called resignations in this report), and this is factored into the demand and supply model. Estimates of resignations among primary teachers are made by examining six concurrent years of payroll data and looking at those teachers who were on payroll in one year but were not on payroll in any subsequent year. Teachers on career break are excluded by checking against

teacher leave data in the Department's On Line Claims System[4]. The results are presented in Table 5 and show large variations over the five years. In reality teachers go on and off the Department's payroll from year to year, and can move from substitution to contract (payroll) over the course of a single year. The data for 2014 is the most reliable (as there are five subsequent years of payroll to check against), while the 2018 figure is less reliable (as there is only one subsequent year to check against). The average for the three years 2014-2016 is 210. An estimate of 210 each year is used for future years.

Table 5 Estimated primary resignations by year and age, 2014-2018

Age	Last year on Payroll				
	2014	2015	2016	2017	2018
<25	28	62	75	129	222
25-34	61	65	115	172	327
35-44	24	28	39	85	145
45+	49	35	50	75	170
Total	162	190	279	461	864
Average 2014-2016		210			

(v)   Career breaks

A career break is a period of special leave without pay for not less than one school year. It may be extended on an annual basis provided the total period of the career break does not exceed five years at any one time. This is subject to a maximum 10 year absence over the course of the teacher's career. The decision to grant a career break is a matter for the employer.

The main objective of the Career Break Scheme is to facilitate applicants, where possible, in relation to areas such as personal development, educational purposes, family reasons and self-employment.

Data on career breaks can be extracted from the On Line Claims System, and is presented in Table 6 below. The data shows an increase in the number of teachers on career break in recent years, rising from 1,444 in 2014 to 2,026 in 2019. Of greater importance however is the number of teachers who do not return to teaching at the end of their career break. Table 6 presents this data and demonstrates that 85 teachers on career break in 2014 were not on career break in 2015 and also did not reappear on the payroll in 2015 or any subsequent year. They also did not appear on the Department pension file. The figure for 2015 was 81 and for 2016 was 111. The data is insufficient for confirming the number of teachers not returning from career break after 2017. The average number of teachers not returning to the profession following a career break between 2014 and 2016 was 92, and this has been

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[4] The On Line Claims System (OLCS) enables schools to submit online details of teacher absences and to make claims for substitute teachers.

added to the general estimate of resignations to give an overall estimate of 302 resignations per annum.

Table 6 Primary teachers on career break, 2014-2019

Year	Total on career break	Career break ending and not returning to payroll
2014	1,444	85
2015	1488	81
2016	1,594	111
2017	1,731	163
2018	1,907	216
2019	2,026	-

(vi)   Job sharing

The purpose of the Job Sharing Scheme is to assist teachers in combining work commitments and personal responsibilities/choices.

Data on job-sharing patterns can be extracted from the Department's payroll data. As Table 7 shows there has been an increase in the number of teachers job-sharing, and this is accounted for in the model by estimating whole-time equivalent positions across the system as opposed to using headcounts of individual teachers.

Table 7 Number of primary teachers job-sharing by pattern and year 2016 – 2019

Year	0.5 job sharers (headcount)	0.5 job sharers (FTE)	Total FTE teaching posts	% Shared posts
2016	1,896	948	35,165.22	2.7
2017	2,261	1,131	36,567.38	3.1
2018	2,610	1,305	37,139.00	3.5
2019	2,989	1,495	37,314.89	4

(vii)   Secondments

Approximately 400 teachers (primary and post-primary) are seconded to work with educational partners and agencies every year, and are therefore not available to teach in schools. An examination of this data shows that on average the number of primary teachers who do not return to teaching following the end of a secondment is negligible (approximately 14 per year between 2014 and 2018), and therefore secondments are not included in the model.

(viii) Demand for primary teachers

The various components of demand outlined above, namely demographic changes, retirements and resignations (including teachers not returning from career break) are presented in Table 8.

Table 8 Projected change in primary teacher demand, 2021-2038

Year	Projected enrolments	Projected teachers	Demand			Projected demand
			Change on previous year	Estimated retirements	Estimated resignations	
2021	554,070	38,212	-588	717	302	431
2022	544,280	37,537	-675	706	302	333
2023	532,841	36,748	-789	701	302	214
2024	522,401	36,028	-720	680	302	262
2025	511,832	35,299	-729	667	302	240
2026	500,689	34,531	-768	643	302	177
2027	489,695	33,773	-758	634	302	178
2028	480,004	33,104	-669	636	302	269
2029	471,750	32,535	-569	642	302	375
2030	464,868	32,060	-475	663	302	490
2031	459,341	31,679	-381	705	302	626
2032	455,187	31,393	-286	787	302	803
2033	452,695	31,221	-172	888	302	1018
2034	451,971	31,171	-50	1013	302	1265
2035	452,983	31,241	70	1146	302	1518
2036	455,614	31,422	181	1,284	302	1767
2037	459,681	31,703	281	1428	302	2011
2038	464,984	32,068	365	1,550	302	2217
Change			-6,732	15,490	5,436	14,194

Table 8 demonstrates that 588 fewer teachers will be needed to meet demographic demand in 2021. However, with a combined loss to the system of 1,019 through retirements and resignations there will be a need for 431 additional teachers. By 2038 the model indicates we can expect 20,926 teachers to either retire or resign (15,490 plus 5,436), and 14,194 of these will need to be replaced.

(ix) Supply of primary teachers

Several sources can be examined to estimate the number of new entrants joining the primary teaching profession each year. By identifying teachers on payroll who were employed in one year but not the previous years, and excluding persons on leave (using the Department's On Line Claims System [OLCS] data), we can arrive at an estimate of new entrants. Table 9 tells us there were 2,207 entrants in 2019, (2,188 in 2018). When looked at by 'point-on-scale' the data shows there were 1,736 new entrants in 2019 on points 1-3 and of these 1,493 were under the age of 30.

Table 9 Primary payroll new entrants by age and point on scale, 2018 and 2019

Age	2018		Total	2019		Total
	Point 1-3	Point 4+		Point 1-3	Point 4+	
30 or under	1,467	210	1,677	1,493	189	1,682
31-35	118	94	212	111	91	202
36-40	70	62	132	71	56	127
41+	61	106	167	61	135	196
Total	1,716	472	2,188	1,736	471	2,207

An alternative approach is to estimate the number of graduates from initial teacher education (ITE) programmes, as presented in Table 10. Primary teachers undertake either an undergraduate ITE programme, or a two-year postgraduate Professional Master of Education (PME) following an undergraduate degree in a discipline other than ITE. Teachers must then register with the Teaching Council in order to be paid by the State.

Registrations with the Teaching Council are also presented in Table 10 and indicate that between 1,750 and 2,000 teachers registered each year between 2016 and 2018.

Combining these different sources provides an estimate of an average number of new entrants to the primary teacher profession. For the purpose of this iteration of the demand and supply model an average of 1,750 teachers each year is used.

Table 10 Data on new entrants to primary teaching 2016-2020

Year	New entrants on payroll	Undergraduate	Professional Masters of Education	Total graduates from ITE	Teaching Council registrations
2016	2,294	926	1,002	1,928	2,002
2017	2,500	1,005	894	1,899	1,744
2018	2,188	1,000	870	1,870	1,789
2019	2,207	-	-	-	-

(x)   Projected demand and supply in primary schools

Table 11 combines the various components of the model into a single view, showing demographic driven demand, demand as a result of resignations and retirements, and an estimate of supply using a combination of ITE graduates and Teaching Council registrations.

The results show that the combination of a steady PTR, falling enrolments, a consistent pattern of retirements and resignations, and consistent rates of ITE graduation will result in an excess of 13,271 primary teachers by 2029, and 17,306 by 2038.

Table 11 Projected demand/supply of primary teachers (PTR of 14.5:1), 2021 – 2038

Year	Projected enrolments	Projected teachers (mainstream)	Projected teachers (other)	Projected teachers (total)	Demand			Projected demand	Estimated supply	Demand less supply
					Change on previous year	Estimated retirements	Estimated resignations			
2021	554,070	22,928	15,284	38,212	-588	717	302	431	1,750	-1,319
2022	544,280	22,523	15,014	37,537	-675	706	302	333	1,750	-1,417
2023	532,841	22,049	14,699	36,748	-789	701	302	214	1,750	-1,536
2024	522,401	21,617	14,411	36,028	-720	680	302	262	1,750	-1,488
2025	511,832	21,180	14,119	35,299	-729	667	302	240	1,750	-1,510
2026	500,689	20,719	13,812	34,531	-768	643	302	177	1,750	-1,573
2027	489,695	20,264	13,509	33,773	-758	634	302	178	1,750	-1,572
2028	480,004	19,863	13,241	33,104	-669	636	302	269	1,750	-1,481
2029	471,750	19,521	13,014	32,535	-569	642	302	375	1,750	-1,375
2030	464,868	19,236	12,824	32,060	-475	663	302	490	1,750	-1,260
2031	459,341	19,008	12,671	31,679	-381	705	302	626	1,750	-1,124
2032	455,187	18,836	12,557	31,393	-286	787	302	803	1,750	-947
2033	452,695	18,733	12,488	31,221	-172	888	302	1,018	1,750	-732
2034	451,971	18,703	12,468	31,171	-50	1,013	302	1,265	1,750	-485
2035	452,983	18,745	12,496	31,241	70	1,146	302	1,518	1,750	-232
2036	455,614	18,854	12,568	31,422	181	1,284	302	1,767	1,750	17
2037	459,681	19,022	12,681	31,703	281	1,428	302	2,011	1,750	261
2038	464,984	19,241	12,827	32,068	365	1,550	302	2,217	1,750	467
Change					-6,732	15,490	5,436	14,194	31,500	-17,306

(xi) Absences and substitution in primary schools

The issue of teacher absences and substitute cover is an important aspect of teacher demand and supply, particularly at primary level. There are 11 leave schemes for absences by teachers employed in recognised primary schools (such as sick leave, maternity leave and adoptive leave among others). In addition, teachers may avail of a brief or short leave of absence from school for various circumstances and situations which may arise, for example, for reasons of bereavement or force majeure.

Absences can be paid or unpaid / substitutable or non-substitutable, depending on the arrangements applying to the absence type.

All absences by primary school teachers, including those working in ETBs, are recorded by the school on the Department's On Line Claims System (OLCS). Where teacher absences lead to the appointment of temporary substitute teachers the claim is also logged and every absence is recorded against the relevant substitute appointed to cover for this absence. Combined, the leave and substitute data can be analysed by instances and types of leave, length of absence, whether the absence is covered by a substitute or not, and the number of substitutes and pattern of cover they are providing.

The following analysis focuses on substitutable leave only, with career breaks and other forms of non-substitutable leave excluded. The analysis was also restricted to staff from mainstream and special schools in the following payroll categories, as these are likely to spend time in the classroom teaching: teachers; mainstream class teachers; assistant and deputy principals; principals (personal basis) and teaching principals.

The total number of substitutable teacher absence days in 2019 was 673,643, down from 740,579 in 2018, although 2019 was an outlier due to the forced school closures associated with Covid-19 (Table 12).

Dividing the total number of leave days in 2019 by the number of days in the school year indicates a requirement for an additional 3,682 whole-time equivalent teachers to cover all instances of leave in a perfectly balanced model (see Table 12).

Table 12 Primary teacher absences, 2016-2019

Year	Total leave days	Whole-time equivalent teachers (Total leave days/183 working days per year)
2016	619,594	3,386
2017	687,618	3,758
2018	740,579	4,047
2019	673,643	3,682

In reality the total number of individuals providing substitute cover in 2019 was 15,702 (Table 13). Of these, 1,182 did just 1 day, while a further 4,166 did fewer than 10 days in total.

Table 13 Primary substitutes by days worked, 2017-2019

Number of days	Number of primary substitutes		
	2017	2018	2019
1	1,205	1,202	1,182
2-4	2,049	2,265	2,189
5-9	1,816	1,961	1,977
10-49	4,958	5,399	4,968
50-99	1,771	2,074	1,852
100-139	941	1,039	1,038
140-169	947	1,028	918
170+	1,784	1,838	1,578
Grand total	15,471	16,806	15,702

Of the total substitute teachers (Table 13), a large proportion (33-35% annually) undertook less than 10 days substitute work in a given year. It is reasonable to assume that these persons are only available to the system on a short term limited basis and their employment illustrates a general difficulty in recruiting registered teachers as substitutes, as reported by schools. Analysis of data from the On Line Claims System for 2019 shows that approximately 4,000 persons employed as substitute teachers in primary schools were unregistered[5]; such persons can only be employed by schools in exceptional circumstances and for limited periods. In addition, approximately 1,200 retired teachers were employed in 2019, mostly in substitute positions.

Table 14 below shows the typical number of schools covered by substitute teachers; more than half worked in just one school in 2019, while a further 4,685 worked in between 2 and 4 schools. A small number of substitutes worked in more than 10 schools.

Table 14 Primary substitutes by number of schools covered, 2019

Number of schools	Number of substitutes
1	8,991
2-4	4,685
5-9	1,634
10+	392
Total	15,702

Of those substitutes who worked in just one school 2,959 worked fewer than 5 days, with a further 1,223 working between 5 and 9 days. Just 1,174 of these substitutes worked the 'full' school year, namely 170+ days.

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[5] In 2018 there were approximately 5,000 unregistered primary substitutes. This may better represent the trend moving forward as the 2019/20 academic year was impacted by Covid-19 and the first lockdown.

Table 15 Primary substitutes who worked in one school by number of days worked, 2019

Number of days	Substitute teachers
1	1,182
2-4	1,777
5-9	1,223
10-49	2,092
50-99	675
100-139	467
140-169	401
170+	1,174
Total	8,991

There is also a need to understand how substitutes transition to contracted work on the Department's payroll. The term 'contracted' here includes full- or part-time work on contracts which are permanent, fixed-term or of indefinite duration. Table 16 presents substitutes who worked in a primary school for 140 days or more in a single school year, which is 183 days in length, and were on contract the following year (i.e. were on the Department's payroll). Of the 2,866 teachers who did 140 days or more in 2018, 978 of them worked on contract the following year, representing a 'conversion rate' of 34.1 per cent. The conversion rate in 2016 was significantly higher at 46.1 per cent. Of those who worked on contract the majority worked full-time (97.4 percent in 2018), meaning that they had a WTE value of one on the Department's payroll. The mean age of this group of teachers was 27 years.

Table 16 Primary substitutes (140+ days) who converted to contract work, 2016-2019

Year of substitution	Substitutes on 140+ days	Of which were contracted the following year	% who moved to contract	% who worked full-time on contract	Average age
2016	2,679	1,234	46.1	98.1	27.3
2017	2,731	1,047	38.3	97.5	27.1
2018	2,866	978	34.1	97.4	27.1
2019	2,496	-	-	-	-

Leave types

An analysis of covered and uncovered absence days by substitutable leave type is presented in Table 17. Of the total 673,643 days claimed, maternity leave was the largest category with 342,738 days, followed by family related leave with 118,514 days and certified sick leave with 99,994 days.

Not all teacher absences were covered by substitutes. Of the total 673,643 absence days in 2019, substitutes provided cover for 570,002 days (Table 17). The amount of substitute cover varies with the type of leave; maternity leave had the highest number of uncovered

days with 40,159 days, followed by certified sick leave with 22,755 days. In percentage terms 'Other' leave had the lowest level of cover at 68 per cent.

Table 17 Primary covered and uncovered leave by leave type, 2019 [6]

Leave Type	Total leave days	Total days covered by substitutes	Uncovered days	% Days covered
Antenatal visits and classes	6,114	4,842	1,272	79
Certified sick leave	99,994	77,239	22,755	77
Family related leave	118,514	98,125	20,389	83
Father's /Relevant Parent Paternity Leave	3,410	2,885	525	85
Health And Safety Leave	613	499	114	81
Maternity Leave	342,738	302,579	40,159	88
Other	6,653	4,520	2,133	68
Pay Deducted (Unpaid Sick Leave)	4,424	3,840	584	87
Pregnancy related illness	24,655	21,713	2,942	88
Principal release time	17,719	14,825	2,894	84
Professional development	15,550	11,373	4,177	73
SEN - colleges and SESS	8,051	6,881	1,170	85
Teacher induction	4,192	3,418	774	82
Temporary Rehabilitation Remuneration Leave	15,738	12,751	2,987	81
Unpaid Leave	5,278	4,512	766	85
Total	673,643	570,002	103,641	85

Table 18 presents an analysis of schools by the number of uncovered days and types of leave. For example, 1,061 schools had 10 or more uncovered days as a result of maternity leave while 634 schools had 10 or more uncovered days as a result of certified sick leave.

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[6] Table 17 does not include self-certified sick leave, which is largely not substitutable at primary level.

Table 18 Primary schools by number of uncovered days, by type of leave, 2019

Leave type	Schools by days uncovered			
	0	1-4	5-10	>10
Antenatal visits and classes	692	422	54	15
Certified sick leave	697	941	501	634
Family related leave	498	1,035	624	516
Health And Safety Leave	8	5	4	3
Maternity Leave	36	217	414	1,061
Other	578	328	36	28
Pay Deducted (Unpaid Sick Leave)	2	4	7	21
Pregnancy related illness	508	348	94	80
Principal release time	1,096	248	129	97
Professional development	1,443	891	167	86
SEN - colleges and SESS	417	312	51	19
Teacher induction	578	249	41	1
Temporary Rehabilitation Remuneration Leave	50	50	48	73
Unpaid Leave	507	238	44	1

Maternity leave

There were a total of 3,260 primary teachers who availed of maternity leave in the 2019/2020 school year. Table 19 below shows the total number of substitutes required to cover this maternity leave. There were 1,717 teachers on maternity leave whose leave was covered by just one substitute, representing almost 53 per cent of the total. For a further 753 teachers 2 substitute teachers were needed to cover the leave, while 3 substitutes were needed for 371. In the case of 242 teachers, schools needed to find 5 or more substitutes to cover the leave.

Table 19 Primary substitute cover for maternity leave, 2019

No. of substitutes per teacher on maternity leave	No. of teachers on leave
1	1,717
2	753
3	371
4	177
5	109
6	64
7	34
8	13
9	10
10	10
11	1
12	1
Total	3,260

Note: all forms of maternity leave taken by a teacher are counted as one (e.g. paid maternity leave followed by unpaid maternity leave is counted as one instance).

Projections of substitute teacher demand

The need for substitute cover is expected to fall in line with demographics, in that as total teacher numbers decline the need for substitutes will also decrease. Using the 2018 figure of 4,047[7] as a starting point for 2020, and projecting forward in line with demographics, the number of substitutes will decrease out to 2038 (see Table 20)[8].

Table 20 Projected change in primary substitutes driven by demographic changes, 2022-2038

Year	Projected substitute teachers
2022	3,880
2024	3,724
2026	3,569
2028	3,422
2030	3,314
2032	3,245
2034	3,222
2036	3,248
2038	3,315

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[7] The number of whole-time equivalent substitutes required to meet the total substitutable absence days in 2018 (see Table 12). The 2018 figure is used here instead of the 2019 figure as the latter was influenced by school closures associated with Covid-19. The 2018 figure is therefore more likely to represent demand for substitutes projecting forward. It is acknowledged that using WTEs as the basis for projecting substitute teachers may not reflect the actual number of teachers required.

[8] These projections do not take account of policy changes which might impact the demand for substitute teachers into the future.

(xii)   The regional dimension at primary level

The number of primary schools and enrolments by the 8 NUTS 3 Regions (see Appendix 2 for a description of NUTS Regions) in 2019 is presented in Table 21.

Just over a quarter of all pupils attend schools in the Dublin region with 144,983 pupils attending 502 schools. Between them Dublin, the Mid-East and the Midlands account for almost a half of all enrolments with 276,749 pupils (48.7 percent), but just under 35 per cent of schools.

Table 21 Primary schools and enrolments, by NUTS 3 region, 2019

	Border	Dublin	Mid-East	Mid-West	Midlands	South-East	South-West	West	Total
Schools	419	502	381	412	249	300	493	484	3240
Share (%)	12.9	15.5	11.8	12.7	7.7	9.3	15.2	14.9	100
Enrolments	48,315	144,983	93,498	55,930	38,268	52,807	80,727	53,188	567,716
Share (%)	8.5	25.5	16.5	9.9	6.7	9.3	14.2	9.4	100

Between 2008 and 2018 enrolments in primary schools increased from 498,914 to 567,772, a rise of 68,858 pupils. This increase was not uniformly spread across the regions. During this ten-year period enrolments in Dublin increased by 20.9 per cent, the Mid-East region increased by 19.1 per cent while in the South-East and Mid-West respectively numbers rose by 7.2 per cent and 5.8 per cent respectively.

A 2019 report on *Regional Projections of full-time enrolments in Primary and Post-primary schools 2019-2036* provides projected enrolments out to 2036 across the eight regions. The results at primary level, presented in summary form in Table 22, show that the overall projected decline in total enrolments will not be evenly distributed across the regions. The decline is expected to be more limited in the Midlands and Mid-East, while Dublin, the South-West, and the West regions will see a sharper fall in pupil numbers. For example, Dublin enrolments are projected to fall by 28.2 per cent over the coming period while those in the Mid-East will fall by just 12.5 per cent.

Table 22 Projected primary enrolments in 2036 by NUTS 3 region

	Border	Dublin	Mid-East	Mid-West	Midlands	South-East	South-West	West	Total
2019	48,315	144,983	93,498	55,930	38,268	52,807	80,727	53,188	567,716
2036	37,665	104,029	81,825	42,373	33,807	39,198	57,263	37,634	433,794
Change	-10,650	-40,954	-11,673	-13,557	-4,461	-13,609	-23,464	-15,554	-133,922
% Change	-22	-28.2	-12.5	-24.2	-11.7	-25.8	-29.1	-29.2	-23.6

The absolute year-on-year change in enrolments is presented in Table 23, which illustrates the varying impact of falling enrolments across the regions.

Table 23 Projected absolute annual change in primary enrolments by region, 2020-2036, (*selected years*)

	Border	Dublin	Mid-East	Mid-West	Midlands	South-East	South-West	West	Total
2020	-629	-490	-1,373	-1,318	5	-2,153	-930	-1,005	-7,894
2022	-1,223	-1,486	-2,041	-1,170	-666	-1,332	-1,794	-1,059	-10,771
2024	-1,108	-1,520	-1,873	-1,029	-611	-1,149	-1,868	-1,020	-10,178
2026	-1,197	-2,294	-1,659	-1,070	-643	-1,194	-2,103	-1,332	-11,491
2028	-873	-2,381	-1,114	-1,031	-529	-1,036	-1,856	-1,105	-9,923
2030	-428	-3,234	-292	-778	-136	-570	-1,369	-962	-7,769
2032	-195	-3,478	309	-529	41	-321	-1,073	-774	-6,019
2034	55	-3,153	899	-237	225	-67	-678	-535	-3,490
2036	309	-2,627	1,407	38	390	178	-280	-254	-837

In order to apply this regional dimension to projected teacher demand the changing share of total enrolments for each region was then applied to the projected *national* gross teacher demand (see Table 11) to arrive at projected gross demand by region.

The results, presented in Table 24, show that Dublin and the South-West will see the biggest fall in gross demand, with the Midlands seeing a smaller fall.

Note: the figures are presented for gross demand only, as there is insufficient data at present to estimate retirements and resignations or supply on a regional basis.

Table 24 Projected change in primary teaching posts by NUTS 3 region, 2020 – 2036

	Border	Dublin	Mid-East	Mid-West	Midlands	South-East	South-West	West	Total
2020	-41	-32	-83	-91	1	-136	-63	-69	-522
2021	-63	-110	-112	-68	-48	-70	-99	-72	-648
2022	-79	-99	-123	-81	-44	-84	-122	-73	-712
2023	-85	-131	-132	-84	-52	-75	-140	-77	-782
2024	-72	-102	-113	-71	-41	-72	-127	-70	-673
2025	-72	-125	-99	-78	-39	-71	-129	-78	-693
2026	-78	-154	-100	-74	-43	-75	-143	-92	-760
2027	-67	-161	-83	-69	-41	-73	-127	-87	-710
2028	-56	-160	-67	-71	-35	-65	-126	-76	-656
2029	-47	-181	-38	-64	-15	-49	-111	-72	-574
2030	-27	-217	-17	-54	-9	-36	-93	-66	-514
2031	-20	-230	0	-46	-3	-28	-84	-60	-465
2032	-12	-233	19	-36	3	-20	-73	-53	-398
2033	-4	-226	38	-26	10	-12	-59	-46	-317
2034	4	-212	55	-16	16	-4	-46	-37	-231
2035	13	-198	71	-6	21	4	-32	-27	-145
2036	21	-176	86	3	27	12	-19	-17	-55
Change	-685	-2,747	-698	-932	-292	-854	-1,593	-1,072	

5. Post-primary sector

(i)   Projected enrolments

While a falling birth rate since 2010 will lead to falling enrolments in the primary system from 2019 onwards, the demographic bulge will continue in the post-primary system for another 3 or 4 years, depending on the projection assumption used (Appendix 1).

The most recent projections of post-primary enrolments under M1F2 indicate enrolments are projected to peak in 2024 with 410,415 pupils, some 31,189 higher than in 2020.

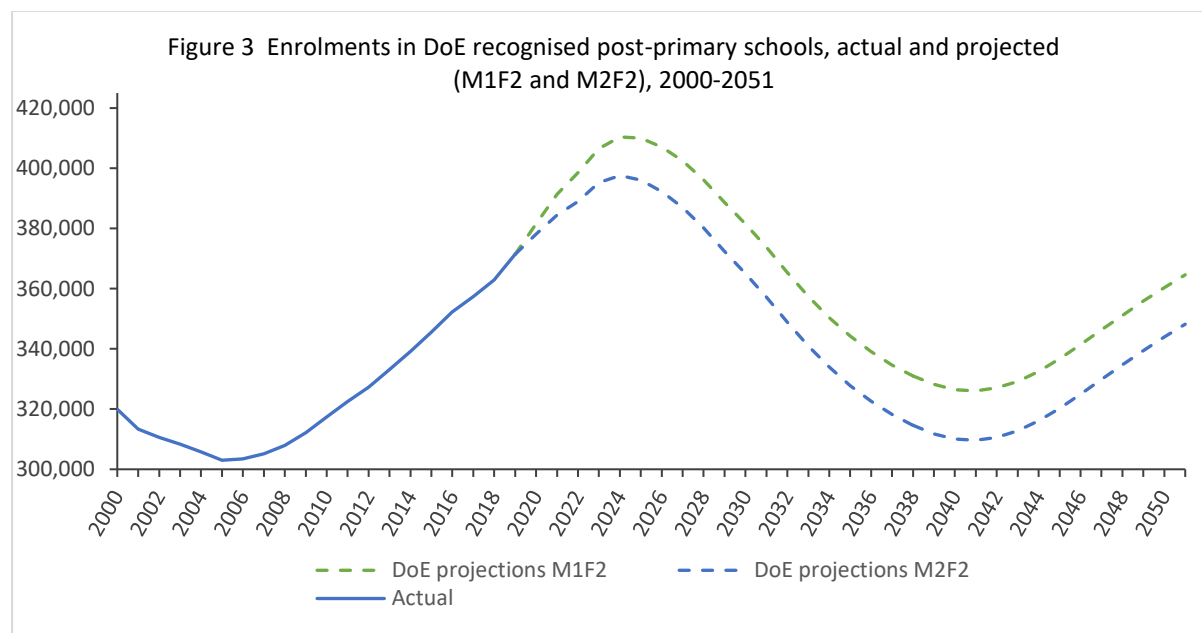Figure 3 Enrolments in DoE recognised post-primary schools, actual and projected (M1F2 and M2F2), 2000-2051

Table 25 shows projected post-primary enrolments up to 2038. Enrolments in Junior Cycle year 1 are projected to peak in 2021 with 73,325 pupils, while total enrolments will peak in 2024 with 410,415 pupils.

Enrolments will fall steadily thereafter out to 2038, when they are projected to be 330,991, some 48,235 lower than today's level.

Table 25 Projected enrolments (M1F2) in DE recognised post-primary schools, by programme year, 2020-2038 *(selected years)*

Year	Junior Cycle 1	Junior Cycle 2	Junior Cycle 3	Transition Year	Senior Cycle 1	Senior Cycle 2	Total	Change
2020	-	-	-	-	-	-	379,226	-
2022	72,946	73,780	72,521	50,304	66,671	62,310	398,531	19,305
2024	70,684	73,587	73,569	53,254	72,375	66,947	410,415	11,884
2026	69,397	70,248	71,343	53,122	72,993	69,935	407,038	-3377
2028	66,514	68,940	70,070	50,830	70,584	69,235	396,173	-10,865
2030	63,012	65,168	67,232	49,931	69,403	66,767	381,512	-14,661
2032	60,463	62,129	63,764	47,333	66,464	65,204	365,358	-16,154
2034	58,548	60,036	61,266	45,254	63,331	61,901	350,335	-15,023
2036	57,085	58,330	59,378	43,815	61,097	59,335	339,041	-11,294
2038	56,315	57,202	57,935	42,644	59,374	57,520	330,991	-8,050

*2020 pupil numbers are projected figures only (final numbers will be available in June 2021).

(ii)   Post-primary teacher numbers

Total teachers in post-primary schools stood at 30,756 (WTE) posts in 2020, split between secondary, community & comprehensive and ETB schools. The number of pupils in post-primary schools increased by 14.1 per cent between 1998 and 2020, while the number of teaching posts rose by 38.7 per cent. This accounts for the fall in the pupil teacher ratio from 15:1 to 12.3:1 in this period, accepting that the 2020 PTR is influenced by temporary Covid-19 related posts.

Table 26 Change in post-primary pupils and teaching posts, 1998-2020 *(selected years)*

Year	Total enrolments	% Change	Total teaching posts (WTE)	% Change	Pupil-Teacher Ratio
1998	332,228		22,181		15.0
2000	319,984	-3.7	23,274	4.9	13.7
2002	310,561	-2.9	24,184	3.9	12.8
2004	305,767	-1.5	23,445	-3.1	13.0
2006	303,495	-0.7	23,881	1.9	12.7
2008	307,917	1.5	24,573	2.9	12.5
2010	317,423	3.1	24,149	-1.7	13.1
2012	327,314	3.1	23,470	-2.8	13.9
2014	339,197	3.6	24,456	4.2	13.9
2016	352,252	1.9	26,273	4.6	13.4
2018	362,899	1.5	28,474	2.0	12.7
2019	371,450	2.4	29,122	2.3	12.7
2020*	379,226	2.1	30,756	5.6	12.3
Change	46,998		8,575		-2.7

*2020 pupil numbers are projected figures only (final numbers will be available in June 2021). The PTR of 12.3 in 2020 includes temporary Covid-19 related posts.

Using projected enrolments as a starting point, Table 27 presents the projected change in teachers by holding the PTR constant at 12.3. This simple model demonstrates teacher numbers peaking in 2024 with 33,368. From 2025 these numbers begin to fall substantially, and by 2038 there are 3,846 fewer teachers than in 2020.

Table 27 Projected number of post-primary teachers (PTR of 12.3:1), 2021-2038

Year	Projected enrolments	Projected teaching posts (WTE)	Change from previous year	% Change
2021	391,379	31,820	1,064	3.5
2022	398,531	32,401	581	1.8
2023	406,528	33,052	651	2
2024	410,415	33,368	316	1
2025	410,019	33,335	-33	-0.1
2026	407,038	33,093	-242	-0.7
2027	402,422	32,718	-375	-1.1
2028	396,173	32,210	-508	-1.6
2029	388,697	31,602	-608	-1.9
2030	381,512	31,018	-584	-1.8
2031	373,707	30,383	-635	-2
2032	365,358	29,704	-679	-2.2
2033	357,362	29,054	-650	-2.2
2034	350,335	28,483	-571	-2
2035	344,257	27,989	-494	-1.7
2036	339,041	27,565	-424	-1.5
2037	334,636	27,207	-358	-1.3
2038	330,991	26,910	-297	-1.1
Change			-3,846	

(iii)   Retirements

The Department's payroll and pension data covers those teachers employed in secondary and community & comprehensive schools only. As ETB teachers are not covered by these data files, adjustments need to be made to include estimates for ETB schools.

Between 2016 and 2019, retirements among teachers in secondary and community & comprehensive schools varied from 377 in 2016 to 424 in 2019. When these numbers are grossed up to include estimates for ETBs, retirements range from 542 in 2016 to 631 in 2019 (Table 28).

Table 28 Post-primary retirements by age, 2016-2019

Age	2016	2017	2018	2019
54 or under	21	21	22	22
55	15	16	18	23
56-60	199	212	223	217
61 and over	142	154	223	162
Total retirements (secondary and C&C)	377	403	486	424
Total teachers (secondary and C&C)	18,301	19,366	19,780	19,581
Total teachers (all schools)	26,273	27,929	28,474	29,122
Estimated total retirements	542	582	700	631

The age profile of teachers in secondary and community & comprehensive schools can be extracted from the payroll files. This age profile is then 'rolled' forward to derive a future age profile of secondary and community & comprehensive teachers to which factors of retirement can be applied.

The most popular form of retirement among teachers is voluntary, which can be availed of from 55 years of age, once the teacher has given 35 years of service. There is therefore a sharp increase in retirements from this age onward. The average number of ill-health retirements between 2014 and 2019, 24.5, is used to project retirement numbers for teachers below 55 moving forward.

Total projected retirements were then grossed up to include estimates for ETB teachers. The results are presented in Table 29. Data for 2019 representing all 16 ETBs indicates that there is an insignificant difference between the age profiles of teachers in ETB schools and those in other post-primary schools.

Note: the projected retirements in 2022 of 457 teachers means that 457 are projected to retire from the 2021 cohort of teachers and so are unavailable in 2022.

As the age profile of retiring staff changes over the coming years the factors of retirement in the model will be updated accordingly, thus ensuring projections are up-to-date.

Table 29 Projected retirements of post-primary teachers by single year of age, 2022 – 2038

| Year | Age at retirement | | | | | | | | | | | | Total |
	Under 55	55	56	57	58	59	60	61	62	63	64	65	
2022	24.5	20.9	31.9	40.8	44.5	44.0	83.0	39.3	30.6	29.7	20.9	46.5	457
2024	24.5	23.0	34.3	36.4	45.8	53.0	96.2	39.2	26.7	32.5	22.9	37.6	473
2026	24.5	24.4	34.9	40.2	49.4	47.4	99.1	47.2	30.9	32.4	20.0	41.1	492
2028	24.5	26.0	37.5	42.7	50.2	52.3	106.8	42.2	31.8	39.0	23.2	40.9	518
2030	24.5	29.7	40.7	45.4	54.0	55.5	108.5	46.6	34.3	34.9	23.9	49.3	548
2032	24.5	34.2	45.3	51.8	58.6	59.0	116.7	49.4	34.9	38.5	25.8	44.1	583
2034	24.5	37.9	52.5	59.8	65.2	67.4	126.5	52.5	37.5	40.8	26.2	48.6	640
2036	24.5	34.0	54.1	66.2	75.6	77.7	140.8	60.0	40.7	43.4	28.2	51.6	697
2038	24.5	30.9	51.1	59.4	77.9	86.0	163.3	69.2	45.3	49.6	30.5	54.9	743

(iv)   Resignations

Estimates of resignations among teachers in secondary and community & comprehensive schools can be derived by examining payroll data over a number of years, and identifying teachers who were present one year but not in subsequent years. Teachers who reappeared on the payroll were not included in the analysis, and teachers on career break were excluded by checking against teacher leave data in the On Line Claims System (OLCS). The results, which must be grossed up to cover ETB teachers, are presented in Table 30 and show large variations over the five years. In reality, teachers may go on and off payroll from year to year, and can move from substitution to contract over the course of a single year. The data from 2014 is probably the most reliable (as there are four subsequent years of payroll to check against), while the 2018 figure is somewhat unreliable (as there is only one subsequent year to check against). The mean number of estimated resignations between 2014 and 2016 is 380.

Note: The extent to which teachers who 'resign' (disappear off the payroll file) and take up positions with ETB schools is unknown, nor can it be analysed without detailed ETB payroll data. The high number of resignations may therefore be over-estimated and, accordingly, caution should be used with the estimate of resignations as it may inflate the teacher demand estimates.

Table 30 Estimated post-primary resignations by year and age, 2014-2018

Age	Last year on payroll				
	2014	2015	2016	2017	2018
Under 25	53	31	46	77	85
25-34	127	120	129	195	249
35-44	34	48	75	95	103
45+	38	43	49	102	108
Total (secondary and C&C)	252	242	299	469	545
Total teachers (secondary and C&C)	17,270	17,256	18,301	19,366	19,780
Total teachers (all schools)	24,456	25,123	26,273	27,929	28,474
Estimated total resignations	357	353	430	677	785
3 year average		380			

(v)   Career breaks

A career break is a period of special leave without pay for not less than one school year. It may be extended on an annual basis provided the total period of the career break does not exceed five years at any one time. This is subject to a maximum 10 year absence over the course of the teacher's career. The decision to grant a career break is a matter for the employer. The main objective of the Career Break Scheme is to facilitate applicants, where possible, in relation to areas such as personal development, educational purposes, family reasons and self-employment.

Data on career breaks can be extracted from the On Line Claims System, and is presented in Table 31 below. The data shows that recent years have seen an increase in the number of teachers on career break and an increase in the number of teachers not returning when they finish this type of leave. For example, an estimated 23 teachers on career break in 2014 were not on career break in 2015 and also did not reappear on the payroll (or pension file) in 2015 or any subsequent year. The average number of teachers not returning to the profession following a career break between 2014 and 2016 was 41, and this has been added to the general estimate of resignations to give an overall estimate of 421 resignations per annum.

Table 31 Post-primary teachers on career break, 2014-2019

Year	Total on career break	Career break ending next year and not returning to payroll any subsequent year	Total teachers (secondary and C&C)	Total teachers (all schools)	Total estimate
2014	396	16	17,270	24,456	23
2015	454	34	17256	25123	50
2016	498	34	18,301	26,273	49
2017	559	65	19,366	27,929	94
2018	576	52	19,780	28,474	75
2019	658	-	19,581	29,122	-

(vi)   Job sharing

The purpose of the Job Sharing Scheme is to assist teachers in combining work commitments and personal responsibilities/choices. An estimate of teacher whole-time equivalents is used in the model (as opposed to estimating individual teachers), and the model therefore accounts for job sharers.

(vii)   Secondments

Approximately 400 teachers (primary and post-primary) are seconded to work with educational partners and agencies every year, and so are not available to teach in schools. On average the number of post-primary teachers who do not return to teaching following the end of a secondment is low (approximately 2 per year between 2014 and 2018), and therefore secondments are not included in the model.

(viii)   Demand for post primary teachers

Combining the demand generated by demographic changes, resignations and retirements provides initial estimates of future demand as shown in Table 32.

The table illustrates that demand will remain above or around 1,500 teachers until 2023, after which demand will begin to fall up to 2033 before rising again.

Table 32 Projected change in post-primary teacher demand, 2021 - 2038

| Year | Projected enrolments | Projected teachers | Demand | | | Projected demand |
			Change on previous year	Estimated retirements	Estimated resignations	
2021	391,379	31,820	1,064	452	421	1,937
2022	398,531	32,401	581	457	421	1,459
2023	406,528	33,052	651	463	421	1,535
2024	410,415	33,368	316	473	421	1,210
2025	410,019	33,335	-33	490	421	878
2026	407,038	33,093	-242	492	421	671
2027	402,422	32,718	-375	498	421	544
2028	396,173	32,210	-508	518	421	431
2029	388,697	31,602	-608	531	421	344
2030	381,512	31,018	-584	548	421	385
2031	373,707	30,383	-635	562	421	348
2032	365,358	29,704	-679	583	421	325
2033	357,362	29,054	-650	611	421	382
2034	350,335	28,483	-571	640	421	490
2035	344,257	27,989	-494	672	421	599
2036	339,041	27,565	-424	697	421	694
2037	334,636	27,207	-358	726	421	789
2038	330,991	26,910	-297	743	421	867
Change			-3,846	10,156	7,578	13,888

(ix)   Supply of post primary teachers

There are currently a number of entry routes for post primary teachers who, depending on their subject, can undertake:

- A 4-year undergraduate ITE programme.
- A two-year postgraduate Professional Master of Education (PME), following an undergraduate programme in a discipline other than ITE, or
- A 4-year undergraduate programme, incorporating curricular subject content and elements of ITE, followed by a one year Master's

Post primary teachers undertaking the PME should have at least one subject from the post-primary schools' curriculum for the Leaving Certificate programme as part of their undergraduate degree.

Data on graduates from initial teacher education programmes show that graduate numbers have fallen substantially in recent years, down from 2,183 in 2014 to 1,620 in 2017. Registrations with the Teaching Council stood at around 1,500 new teachers each year between 2016 and 2018.

In order to estimate future Teaching Council registrations, first-year enrolment data on initial teacher education programmes was projected forward to provide initial estimates of graduates up to 2024/25. These estimates were then adjusted to allow for those entrants who do not complete the programme. Using historical data, the likelihood of entrants to the relevant undergraduate programmes graduating four years later was estimated at 88 per cent, while the equivalent estimate at postgraduate level was 94 per cent. An estimate of 150 Hibernia graduates per year was also added to the model. Finally, using past patterns of actual rates of registration with the Teaching Council, estimates were derived for the future supply of post-primary teachers up to 2024. Beyond this point, the estimation of supply is held constant at 1,900.

The following example is to demonstrate the approach taken. The number of undergraduate ITE first year enrolments in 2016 was 757. Approximately 88 percent of these enrolments are expected to have graduated in 2020, equivalent to 667 graduates. In addition, there were 42 enrolments on the third year of undergraduate ITE programmes after the completion of common entry science undergraduate programmes. It is assumed for the purpose of the model that all 42 enrolments on the third year of undergraduate programmes graduated in 2020, giving a total projected number of undergraduate ITE graduates for that year of 709.

In 2018 there were also 830 first year enrolments on postgraduate PME programmes, and with an approximate attrition rate of 6 percent, this gives 781 graduates from postgraduate PME programmes in 2020.

Combined with the 150 projected graduates from Hibernia in 2020, the total number of graduates for 2020 was projected to be 1,640.

The total number of registrations with the Teaching Council tends to be approximately 92 percent of the number of total graduations, giving an estimate of 1,509 registrations with the Teaching Council at post-primary level in 2020.

Table 33 Historic and projected graduates and Teaching Council registrations, 2014 - 2024

Year		UG ITE first year enrolments	UG ITE third year enrolments	UG ITE graduates (based on first year enrolments)	UG ITE graduates (based on third year enrolments)	Projected UG ITE graduates (assuming 12% attrition of first year enrolments)	PG PME first year enrolments	PG PME graduates (based on first year enrolments)	Projected PG PME graduates (assuming 6% attrition)	Projected Hibernia graduates	Projected total graduates (Projected UG ITE graduates + Projected PG PME graduates + Projected Hibernia Graduates)	Projected Teaching Council registrations (92% of projected total graduates)
actual	2014	691	7	-	-	-	863	-	-	254	-	-
	2015	667	16	-	-	-	853	-	-	203	-	-
	2016	757	20	-	7	-	797	863	812	165	-	-
	2017	794	28	-	16	-	768	853	802	180	-	-
	2018	816	42	691	20	629	830	797	750	160	1539	1416
projected	2019	1,022	54	667	28	615	901	768	722	150	1487	1369
	2020	1,179	64	757	42	709	906	830	781	150	1640	1509
	2021	-	70	794	54	753	900	901	847	150	1750	1610
	2022	-	70	816	64	783	900	906	852	150	1785	1643
	2023	-	-	1022	70	970	-	900	846	150	1,966	1809
	2024	-	-	1179	70	1108	-	900	846	150	2,104	1936

UG – undergraduate, PG – post-graduate

(x)   Projected demand and supply in post-primary schools

Table 34 presents the results of the combined demographic projections, retirements, resignations and supply. There is a projected shortfall of 327 teachers in 2021. Thereafter the model predicts an oversupply of teachers each year out to 2038. Total oversupply by 2038 is estimated to be 19,710.

Table 34 Projected demand/supply of post-primary teachers (PTR of 12.3:1), 2021 – 2038

| Year | Projected enrolments | Projected teachers | Demand | | | Projected demand | Estimated supply | Demand less supply |
			Change on previous year	Estimated retirements	Estimated resignations			
2021	391,379	31,820	1,064	452	421	1,937	1,610	327
2022	398,531	32,401	581	457	421	1,459	1,643	-184
2023	406,528	33,052	651	463	421	1,535	1,809	-274
2024	410,415	33,368	316	473	421	1,210	1,936	-726
2025	410,019	33,335	-33	490	421	878	1,900	-1,022
2026	407,038	33,093	-242	492	421	671	1,900	-1,229
2027	402,422	32,718	-375	498	421	544	1,900	-1,356
2028	396,173	32,210	-508	518	421	431	1,900	-1,469
2029	388,697	31,602	-608	531	421	344	1,900	-1,556
2030	381,512	31,018	-584	548	421	385	1,900	-1,515
2031	373,707	30,383	-635	562	421	348	1,900	-1,552
2032	365,358	29,704	-679	583	421	325	1,900	-1,575
2033	357,362	29,054	-650	611	421	382	1,900	-1,518
2034	350,335	28,483	-571	640	421	490	1,900	-1,410
2035	344,257	27,989	-494	672	421	599	1,900	-1,301
2036	339,041	27,565	-424	697	421	694	1,900	-1,206
2037	334,636	27,207	-358	726	421	789	1,900	-1,111
2038	330,991	26,910	-297	743	421	867	1,900	-1,033
Change			-3,846	10,156	7,578	13,888	33,598	-19,710

(xi) Absences and substitution in voluntary secondary and community & comprehensive schools

Note*: tables 35-42 exclude estimates for ETBs, due to the unavailability of leave data for this sector combined with the added complication of estimating both the leave and cover for these schools. Caution should also be taken in interpreting the amount of substitute cover in particular; absence data is provided in days, whereas substitute data is provided in hours. This can lead to complications in the interpretation of the data and may have inflated the amount of substitute cover estimated in tables 36, 38, and 39.*

There were 227,532 days of substitutable leave taken by post-primary teachers in 2019, and in a balanced model an estimated 1,363 substitutes would be required to cover this (Table 35).

Table 35 Post-primary teacher absences, 2016-2019

Year	Total leave days	Whole-time equivalent teachers (Total leave days/167 working days per year)
2016	218,140	1,307
2017	236,512	1,417
2018	243,744	1,460
2019	227,532	1,363

In practice, there was a total of 7,240 substitutes covering this leave, the majority of whom worked fewer than 50 days a year, and in one school only, as shown in tables 36 and 37.

Table 36 Post-primary substitutes by days worked, 2017 – 2019

Number of days	Number of post-primary substitutes		
	2017	**2018**	**2019**
1	371	317	347
2-4	756	690	741
5-9	993	838	897
10-49	2,652	2,543	2,599
50-99	1,112	1,247	1,119
100-139	565	611	535
140-169	398	444	405
170+	642	685	597
Total	7,489	7,375	7,240

Of the total substitutes (Table 36), a large proportion (25-28% annually) undertook less than 10 days substitute work in a given year. It is considered reasonable to assume that these persons are only available to the system on a short term limited basis and their employment illustrates a general difficulty in recruiting registered teachers as substitutes, as reported by schools. Analysis of data from the On Line Claims System for 2019 shows that

approximately 3,000 persons employed as substitutes in voluntary secondary, community and comprehensive schools were unregistered[9]; such persons can only be employed by schools in exceptional circumstances and for limited periods. In addition, approximately 320 retired teachers were employed in 2019, mostly in substitute positions[10].

Table 37 Post-primary substitutes by number of schools covered, 2019

Number of schools	Number of substitutes
1	6,474
2-4	754
5-9	12
Total	7,240

Table 38 presents an analysis of substitutes who worked in a post-primary school for 140 days or more in a single school year, and were on contract the following year. Of the 1,129 substitutes who did 140 days or more in 2018, 300 of them worked on contract the following year, representing a 'conversion rate' of 26.6 per cent.

Table 38 Post-primary substitutes (140+ days) who converted to contract work, 2016-2019

Year of substitution	Substitutes on 140+ days	Of which were contracted the following year	% who moved to contract	% who worked full-time on contract	Average age
2016	1,005	379	37.7	49.6	29
2017	1,040	294	28.3	47.6	29.4
2018	1,129	300	26.6	48.7	28.9
2019	1,002	-	-	-	-

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[9] In 2018 there were approximately 3,150 unregistered post-primary substitutes. This may better represent the trend moving forward as the 2019/20academic year was impacted by Covid-19 and the first lockdown.
[10] In the previous version of the report the number of retired teachers employed in 2017 was mistakenly given as 1,340. This should have been approximately 340.

Leave types

When examined by leave type the data shows a similar pattern to the primary sector, with maternity leave, certified sick leave and family related leave accounting for the largest share of teacher absences. The number of covered and uncovered days by leave type are presented in Table 39 below.

Table 39 Post-primary covered and uncovered leave by leave type, 2019

Leave type	Total leave days	Total days covered by subs	Uncovered days	% Days covered
Antenatal visits and classes	1,146	976	170	85
Certified sick leave	51,979	44,885	7,094	86
Examiner State Examinations	3,205	2,805	400	88
Family related leave	39,844	34,824	5,020	87
Father's /Relevant Parent Paternity Leave	2,983	2,568	415	86
Junior Cycle - management resources/CPD/prof. time	9,238	7,894	1,344	85
Maternity Leave	89,161	83,174	5,987	93
Other	2,391	1,491	900	62
Pay Deducted (Unpaid Sick Leave)	1,460	1,148	312	79
Pregnancy related illness	7,463	6,604	859	88
Professional development	6,540	5,644	896	86
SEN - colleges and SESS	2,691	2,406	285	89
Teacher induction	1,072	872	200	81
Temporary Rehabilitation Remuneration Leave	8,359	7,299	1060	87
Total	227,532	202,590	24,942	89

Table 40 shows schools with uncovered days by type of leave and demonstrates how 216 schools had more than ten days of uncovered leave as a result of certified sick leave.

Table 40 Post-primary schools by number of uncovered days, by type of leave, 2019

Leave type	Schools by days uncovered			
	0	1-4	5-10	>10
Antenatal visits and classes	145	79	5	-
Certified sick leave	27	110	120	216
Examiner State Examinations	223	108	16	7
Family related leave	43	142	135	140
Father's /Relevant Parent Paternity Leave	108	66	37	1
Junior Cycle - management resources/CPD/prof. time	166	209	37	23
Maternity Leave	23	82	111	144
Other	128	77	16	9
Pay Deducted (Unpaid Sick Leave)	-	11	4	3
Pregnancy related illness	123	106	29	17
Professional development	181	211	42	13
SEN - colleges and SESS	94	51	23	3
Teacher induction	154	68	12	1
Temporary Rehabilitation Remuneration Leave	32	40	39	21

Maternity leave

Just 342 of the 869 post-primary teachers who took maternity leave had that leave completely covered by one substitute, representing approximately 39 per cent of all teachers in this group. Given that post-primary teachers will often teach more than one subject it may be expected that more than one substitute will be required to cover the absence.

Table 41 Post-primary substitute cover for maternity leave, 2019

No. of substitutes per teacher on maternity leave	No. of teachers on leave
1	342
2	112
3	77
4	72
5	62
6+	204
Total	869

Note: all forms of maternity leave taken by a teacher are counted as one (e.g. paid maternity leave followed by unpaid maternity leave is counted as one instance).

Projections of substitute teacher demand

The need for substitute cover is expected to change in line with demographics, in that as total teacher numbers decline the need for substitutes will also decrease. Using the 2018 figure of 1,460[11] as a starting point for 2020, and projecting forward in line with demographics, the number of substitutes would rise up to 2024. The numbers would then fall from 2026 onwards, as presented in Table 42.

Table 42 Projected change in post-primary substitutes driven by demographic changes, 2022-2038

Year	Projected substitute teachers
2022	1,604
2024	1,651
2026	1,638
2028	1,594
2030	1,535
2032	1,470
2034	1,410
2036	1,364
2038	1,332

[11] The number of whole-time equivalent substitutes required to meet the total substitutable absence days in 2018 (see Table 35). The 2018 figure is used here instead of the 2019 figure as the latter was influenced by school closures associated with Covid-19. The 2018 figure is therefore more likely to represent demand for substitutes projecting forward. It is acknowledged that using WTEs as the basis for projecting substitute teachers may not reflect the actual number of teachers required.

(xii)   The regional dimension at post-primary level

The number of post-primary schools and pupil enrolments by NUTS 3 regions in 2019 is presented in Table 43. Dublin accounted for approximately a quarter of enrolments (24.7 percent) and schools (25.3 percent).

Table 43 Post-primary schools and enrolments, by NUTS 3 region, 2019

	Border	Dublin	Mid-East	Mid-West	Midlands	South-East	South-West	West	Total
Schools	70	183	92	76	43	66	111	82	723
Share (%)	9.7	25.3	12.7	10.5	5.9	9.1	15.4	11.3	100
Enrolments	32,145	91,832	59,574	38,295	24,890	36,325	53,788	34,601	371,450
Share (%)	8.7	24.7	16.0	10.3	6.7	9.8	14.5	9.3	100

A 2019 report on *Regional Projections of full-time enrolments in Primary and Post-primary schools 2019-2036* provides projected enrolments out to 2036 across the 8 NUTS 3 Regions. The results at post-primary level are presented in summary form in Table 44. Total enrolments are expected to increase by 8.3 per cent between 2019 and 2024 but then decrease by 19 per cent by 2036. Within that, Dublin will experience the largest increase by 2024 (13.3 per cent), while the Mid-West will only experience a 2.3 per cent growth in enrolments in the same period.

Table 44 Projected post-primary enrolments in 2036 by NUTS 3 region

	Border	Dublin	Mid-East	Mid-West	Midlands	South-East	South-West	West	Total
2019	32,145	91,832	59,574	38,295	24,890	36,325	53,788	34,601	371,450
2024	34,306	104,079	64,743	39,183	27,916	37,430	58,399	36,119	402,175
2036	26,676	88,091	53,611	31,021	24,481	29,161	44,766	28,104	325,911
Change (2024)	2,161	12,247	5,169	888	3,026	1,105	4,611	1,518	30,725
% Change (2024)	6.7	13.3	8.7	2.3	12.2	3.0	8.6	4.4	8.3
Change (2036)	-7,630	-15,988	-11,132	-8,162	-3,435	-8,269	-13,633	-8,015	-76,264
% Change (2036)	-22.2	-15.4	-17.2	-20.8	-12.3	-22.1	-23.3	-22.2	-19.0

To understand the impact of these changes on projected teacher numbers by region, the varying share of enrolments in each region (see Table 45) was applied to total projected teachers each year. The results are presented in Table 46, and show that the South-West, the South-East and the Mid-West will see the biggest fall in gross demand, but with a more limited decline in the Midlands. Note: the figures are presented for gross demand only as there is insufficient data at present to estimate retirements and resignations on a regional basis.

Table 45 Projected absolute annual change in post-primary enrolments by region, 2020-2036, (*selected years*)

	Border	Dublin	Mid-East	Mid-West	Midlands	South-East	South-West	West	Total
2020	812	2592	727	-471	1100	-109	780	237	5668
2022	384	2588	1243	377	562	228	1052	297	6730
2024	32	1742	416	34	228	20	491	155	3117
2026	-358	-198	-693	-512	-69	-400	-526	-304	-3060
2028	-709	-1410	-1410	-668	-464	-703	-1172	-625	-7160
2030	-913	-1132	-1266	-761	-435	-895	-1469	-816	-7687
2032	-853	-1457	-1239	-814	-513	-1012	-1543	-900	-8331
2034	-619	-2028	-736	-790	-217	-702	-1343	-833	-7267
2036	-338	-2645	-243	-594	-57	-440	-1057	-710	-6084

Table 46 Projected change in post-primary teaching posts by NUTS 3 region, 2020 – 2036

	Border	Dublin	Mid-East	Mid-West	Midlands	South-East	South-West	West	Total
2020	66	195	55	-40	92	-9	64	20	453
2021	49	205	120	59	48	52	103	43	684
2022	31	194	94	33	47	20	86	25	537
2023	27	194	90	23	47	33	83	27	531
2024	3	131	32	3	19	2	40	13	249
2025	-14	43	-18	-28	-1	-19	1	1	-33
2026	-28	-14	-51	-43	-5	-34	-42	-25	-244
2027	-48	-91	-79	-53	-16	-49	-67	-45	-452
2028	-56	-105	-105	-57	-38	-60	-94	-51	-571
2029	-75	-94	-113	-70	-40	-82	-122	-64	-660
2030	-73	-84	-94	-65	-36	-77	-118	-67	-613
2031	-74	-87	-92	-61	-39	-82	-123	-74	-629
2032	-68	-109	-92	-69	-42	-87	-124	-74	-664
2033	-61	-119	-76	-72	-32	-77	-122	-69	-628
2034	-49	-151	-55	-67	-17	-60	-108	-68	-579
2035	-33	-182	-33	-57	-9	-46	-92	-63	-521
2036	-27	-198	-18	-50	-4	-38	-85	-58	-485
Change	-430	-272	-435	-614	-26	-613	-720	-529	

Appendix 1

Migration

For migration at Primary level the following set of assumptions were used:

M1 = 1,800. This assumption shows a return to net inward migration. The net inward migration will be at levels similar to those seen in the early 2000s.

M2 **=** 1,200. Net migration reflects current positive inward migration from 2018 onwards.

M3 = 600. Net migration will remain slightly positive for the whole period of the projections.

At Post-primary level, it is difficult to determine the true number of emigrants from the education system from the data available, given the higher numbers of departures from the second-level system compared to those from first level, particularly after the ending of compulsory school age. A flow-based approach, which includes migration flows, is therefore taken at second level using overall numbers of entrants to and leavers from the system at each programme level, retention rates and the "cohort survival" rates from one year to another.

Fertility

The most recent evidence shows the Total Period Fertility Rate (the total number of children a woman can expect to have over her lifetime) in Ireland fell sharply from the 2010 level of 2.09 to 1.8 in 2017, and has now been below replacement rate for a number of years. Two TPFR assumptions were applied:

F1: TPFR to remain at the 2017 level of 1.8 for the lifetime of the projections.

F2: TPFR will decline to 1.61 by 2030 and remain at that rate thereafter.

The state projections used three migration assumptions and two fertility assumptions giving rise to six scenarios in total for which projected enrolments data was compiled.

For the purposes of this report, the Department has chosen M1F2 as the most likely scenario regarding migration and fertility, which encompasses the assumption of high migration and fertility falling from 1.8 to 1.6 over the course of next 12 years.
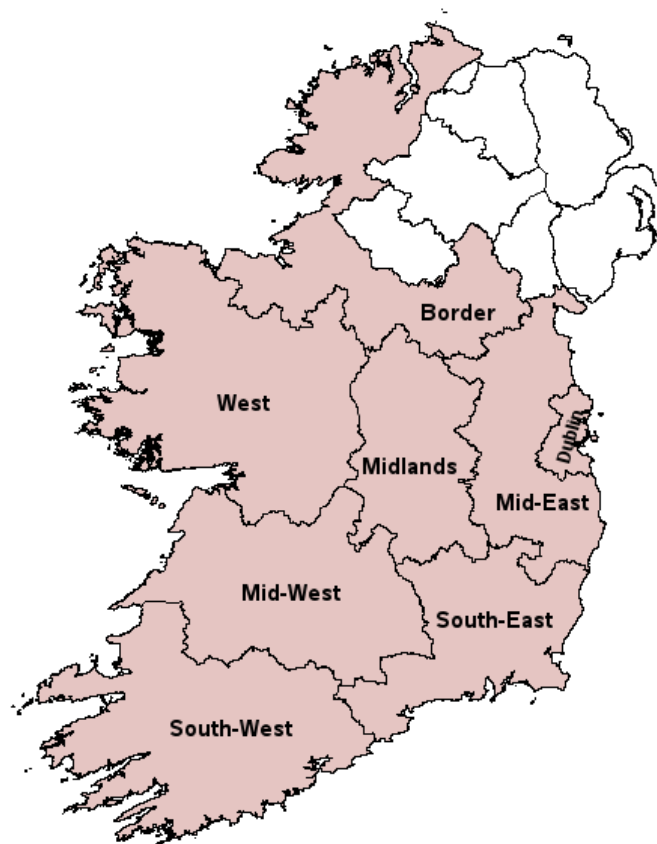
Appendix 2

NUTS 3 Regions

The Nomenclature of Territorial Units for Statistics (NUTS) were created by Eurostat in order to define territorial units for the production of regional statistics across the European Union.

The eight NUTS 3 regions are comprised of the following counties

NUTS 2	Eastern and Midlands			Southern			Northern and Western	
NUTS 3	Dublin	Mid-East	Midlands	Mid-West	South-East	South-West	Border	West
County	Dublin	Wicklow Kildare Meath Louth	Longford Westmeath Offaly Laois	Clare Tipperary Limerick	Waterford Kilkenny Carlow Wexford	Cork Kerry	Donegal Sligo Leitrim Cavan Monaghan	Galway Mayo Roscommon

Appendix 3

Data issues in developing the model

1. ETB teachers

The teacher demand and supply model makes extensive use of the Department's payroll and pension files. These files cover teachers in secondary and community & comprehensive schools only, and the equivalent data had not been acquired for the 245 ETB schools. The payrolls for the ETB teachers are managed by 16 separate ETBs with different payroll systems. An early decision was made to conduct the analysis on secondary and community & comprehensive schools only, with the results extrapolated in order to provide estimates for teachers across the whole post-primary sector. This situation will evolve as and when the shared services for the 16 ETBs are developed. For now, the age profiles of teachers used in the post-primary retirement estimates are adjusted based on aggregate single year of age data received from 10 ETBs.

2. Resignations

Estimates of resignations were derived by identifying teachers on the payroll file in 2014 but not in subsequent years. While this methodology is robust for primary teachers, in the post-primary sector it was not possible to cross-check these 'resignations' against ETB payroll data. Accordingly estimates of resignations for the post-primary sector are most likely overstated by the number of teachers who move from a secondary or community / comprehensive school to an ETB school.

3. Regional retirements and resignations

Extensive modelling and additional data is required to estimate retirements on a regional level; the benefit to the model would need to be determined before this additional analysis is conducted.

4. The On Line Claims System

The On Line Claims System provides data on teachers on leave. The beginning and end date only are entered so extensive data cleaning was carried out in order to remove non-school days such as weekends, mid-term breaks, Christmas and Easter holidays. Assumptions were made regarding these school closures at a general level, at not at an individual school level.

Appendix 4

Teacher Supply Data Working Group - Terms of Reference and Membership

1. Role

The Working Group will:
(a) Identify:
- the key factors that impact upon the demand for and supply of teachers
- the data sets required to analyse each of these factors
- the various owners of the data

(b) Develop and recommend proposals for the collection and analysis of relevant data
(c) Identify the steps for the development and implementation of models of teacher supply at primary and post primary level, having regard to advice from the Teaching Council.
(d) Identify the organisational arrangements and resources necessary to develop, implement and maintain models of teacher supply at primary and post primary levels.
(e) Oversee, and review on an ongoing basis, actions implemented under this heading.

2. Frequency of meetings

The frequency of meetings will be determined by the Group's work programme.

3. Reporting

The Working Group will report and make recommendations to the Implementation Group.

Recommendations will include a sequenced programme of actions, with an estimated timeline for implementation and, where relevant, estimated costs/ resource requirements. The lead agent for each action will also be identified.

Teacher Supply Data Working Group Membership (1 May 2021)

Chairperson: Deirdre Shanley, Department of Education
- Chris Kelly, Department of Education
- Jason Kelly, Department of Education
- Paul McCarthy, Department of Education
- Jill Fannin, Department of Education
- Deirdre Cullen, Department of Education
- Sinéad Keenaghan, Department of Education
- Stephen Lucas, Department of Education
- Sinead Middleton, Department of Education
- Laura Watts, Department of Education
- Rachel O'Brien, Department of Education
- Maria Fitzgerald, Teaching Council
- Karen Eastwood Lovett, Teaching Council
- Fiona Kindlon, Education and Training Boards Ireland
- Dr. Manuela Heinz, Irish Universities Association
- Lewis Purser, Irish Universities Association
- Dr. Michael Redmond, nominee of post primary management bodies
- Deirdre O'Donoghue, nominee of primary management bodies