



The challenge of navigating teacher recruitment, pay and curriculum choices

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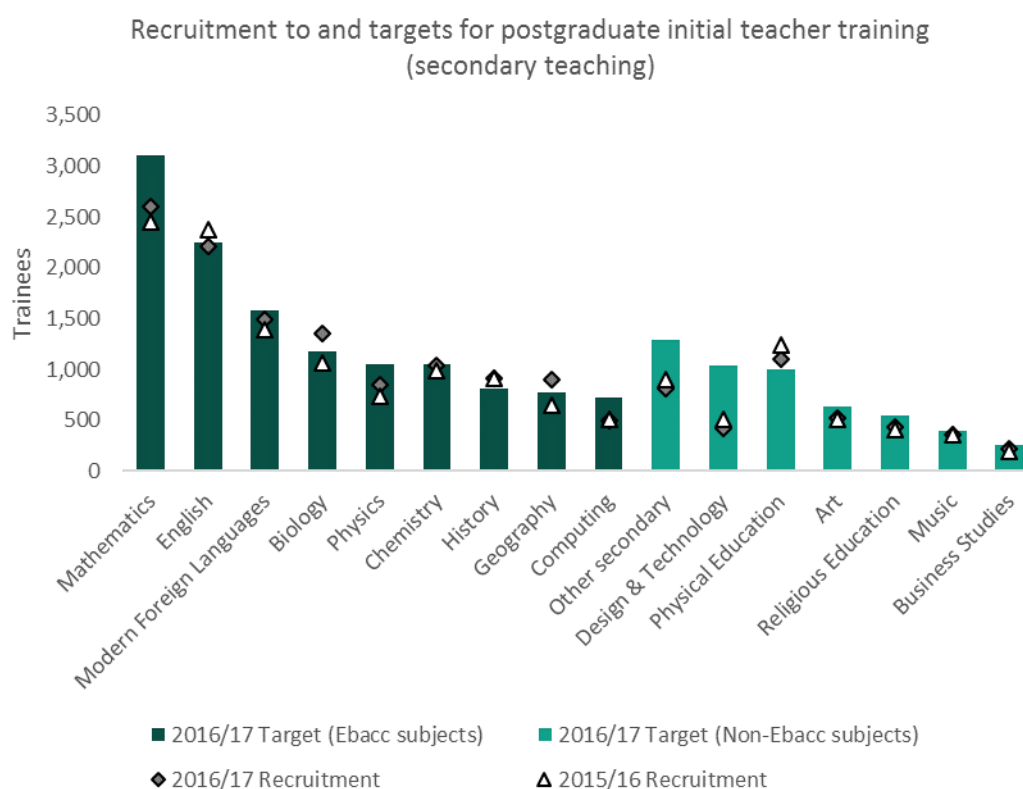
The need to supply our schools with sufficient teachers has risen up the education policy agenda in recent years. A recent report by the Education Select Committee highlighted ongoing difficulties in recruiting teachers in the context of heavy workloads, more competitive labour market opportunities and falls in relative teacher pay.¹ An assessment of the latest recruitment figures and Teacher Supply Model projections suggests that these concerns continue to be merited. We find that:

- overall recruitment to postgraduate initial teacher training improved in 2016/17 compared with 2015/16, but a decrease in applications up to June of 3 per cent compared with 2016/17 signals that recruitment challenges are continuing;
- the Department for Education (DfE) is planning on the basis that pupil:teacher ratios will increase from 14.5 to 16.0 over the decade from 2016/17, limiting the number of teachers needed as pupil numbers grow. Despite this, and a reduction in retirements, this year's targets have increased by 6 per cent;
- as a result of the Government's ambitions to increase uptake of EBacc subjects, the Teacher Supply Model anticipates a 78 per cent increase in the number of modern foreign language teachers required to join the sector in 2019/20;
- continuing to increase training bursaries in response to this need could represent poor value for money. The marginal cost per additional trainee of a £1,000 increase in bursaries could be as high as £60,000 some subjects;
- this makes alternatives worth pursuing, even if they appear expensive, provided new programmes can be learnt from. Emerging evidence from new approaches show mixed results, with particular difficulties experienced by teachers attempting to return to or join schools under more flexible working arrangements;
- improving working conditions will be important for attracting and retaining teachers. As recognised by the School Teachers' Pay Review body this week, continuing pay restraint may make this more difficult, with teacher salaries set to fall by 5 per cent by 2019-20 relative to a scenario where they keep up with inflation;
- this will be especially problematic for new teachers in STEM subjects, who are relatively underpaid. Forgiveness of student loans may offer a solution, but this Conservative manifesto commitment highlights a reluctance to rely solely on school autonomy to improve workforce management.

¹ House of Commons Education Committee, 2017, 'Recruitment and retention of teachers: Fifth report of session 2016-17', <https://www.publications.parliament.uk/pa/cm201617/cmselect/cmeduc/199/199.pdf>

Demographic trends among teachers might have reduced the impact of recruitment shortfalls in the coming years...

As illustrated in the following chart, relative to targets, recruitment to postgraduate initial teacher training (ITT) improved in 2016/17 for secondary school teachers: 89 per cent of the Department for Education's (DfE's) overall target was met, compared with 82 per cent in 2015/16. There was an increase of 530 trainees overall. However, there were still shortfalls of more than 5 per cent in 10 out of 17 subjects, including mathematics (recruiting 84 per cent of target), physics (81 per cent), and modern foreign languages (94 per cent). For primary teaching, the target was met almost exactly (recruiting 11,516 compared to a target of 11,489), following an over-recruitment of 12 per cent the year before.²



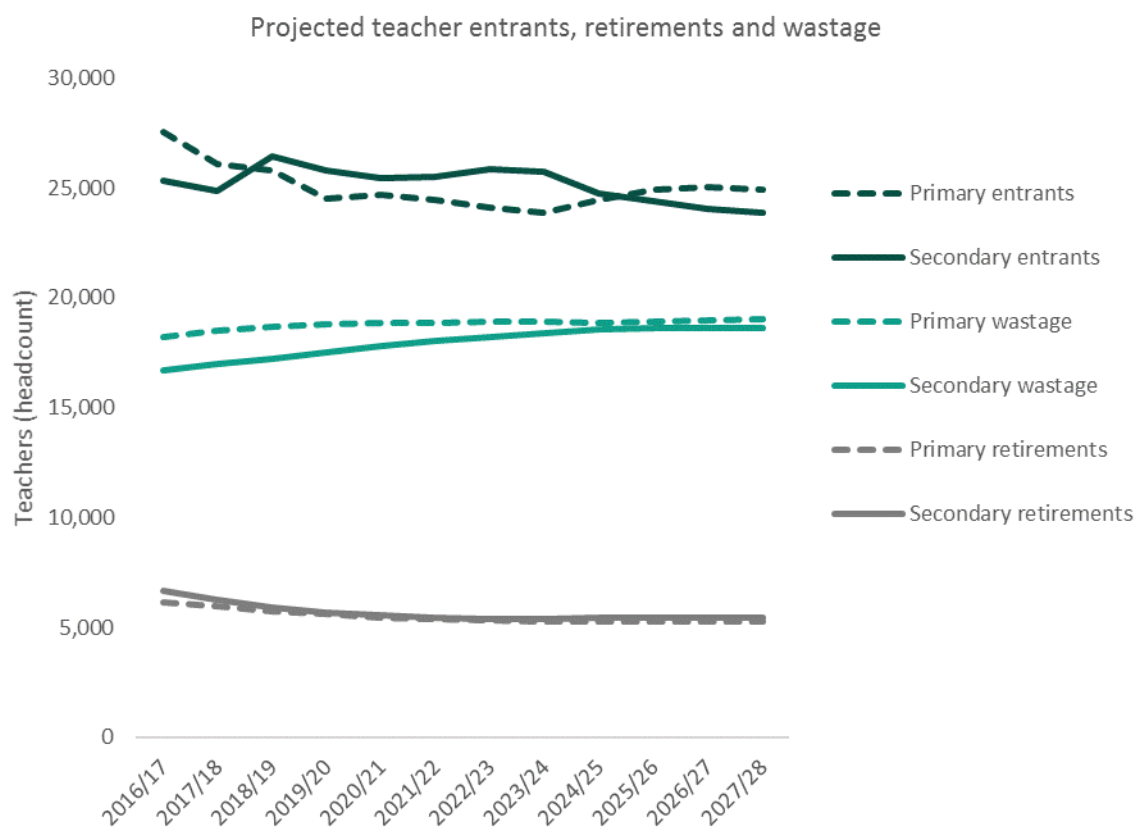
Whilst the number of teachers needed in primary schools is expected to plateau for at least the next 5 years, the recent decline in the number of teachers needed in secondary schools is reversing, with the pupil population projected to rise by 18 per cent between now and 2025/26.³ The Teacher Supply Model (TSM) is the analytical tool used by the DfE to estimate the number of trainees required. The model includes an assumption that, in line with previous trends (and consistent with a reduction in real terms funding per pupil), the ratio between pupils and teachers in secondary

² Department for Education, 2016, 'Initial Teacher Training census for the academic year 2016 to 2017, England', <https://www.gov.uk/government/statistics/initial-teacher-training-trainee-number-census-2016-to-2017>

³ Lynch, S. and Worth, J., 2017, 'More teachers are joining than leaving the profession, but will it be enough to meet demand?', The NFER Blog, <https://thenferblog.org/2017/06/22/more-teachers-are-joining-than-leaving-the-profession-but-will-it-be-enough-to-meet-demand/>; Department for Education, 2017, 'Teacher Supply Model 2017/18'.

schools will increase from 14.5 in 2016/17 to 16.0 in 2026/27.⁴ It is already high by international, and particularly European, standards.⁵ Bigger class sizes help to manage recruitment needs, but risk creating more stretched workforce. Secondary school class sizes have begun to increase gradually, with 11.5 per cent of pupils in classes of over 30 in 2017 compared with 9.4 per cent in 2014.⁶

The TSM estimates that annual retirements are set to continue to fall over the next 7 years, which is also expected to further limit the required number of new teachers (as shown in chart below). In secondary schools, the number of entrants needed is forecast to rise by 6.4 per cent from 2017-18 to 2018-19, before falling back to the 2017-18 level by 2024/25. The number of teachers expected to leave the state-funded sector before retirement age – referred to as ‘wastage’ – is expected to increase in the coming years, particularly in secondary schools. This is due to demographic factors and takes no account of any further economic changes, including to relative pay.⁷



...but curriculum policy aspirations create additional challenges

This year’s TSM again assumes that the ongoing effects of accountability and exam reforms will lead to a higher demand for mathematics and science teachers. ITT allocations were determined before the Conservative manifesto ambition for “75 per cent of pupils to have been entered for the EBacc combination of GCSEs by the end of the next parliament, with 90 per cent of pupils studying this combination of academic GCSEs by 2025”, but there is an assumption that teaching in EBacc subjects

⁴ Department for Education, 2017, ‘Teacher Supply Model 2017/18’, <https://www.gov.uk/government/statistics/teacher-supply-model-2017-to-2018>

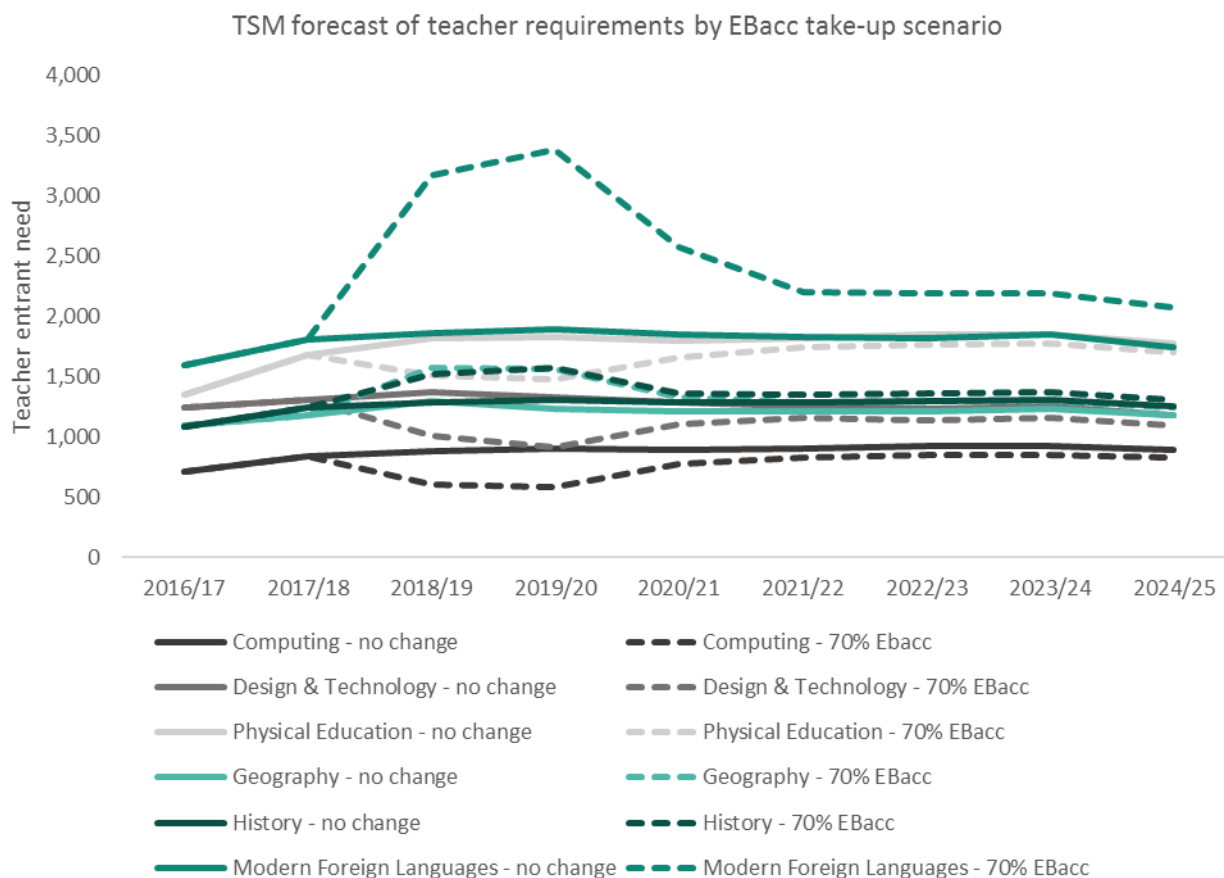
⁵ OECD, 2016, ‘Education at a Glance 2016’, Table D2.2

⁶ Department for Education, 2017, ‘Schools, pupils and their characteristics: January 2017’, Table 6b, <https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2017>

⁷ Department for Education, 2017, ‘Teacher Supply Model 2017/18’, <https://www.gov.uk/government/statistics/teacher-supply-model-2017-to-2018>

will increase in a way consistent with a 70 per cent entry rate over two years from 2018/19, at the expense of teaching in other subjects.⁸

The chart below illustrates the implications for entrant needs (including NQTs and others), compared to assuming there is no increase in EBacc take-up. For MFL, there is a 78 per cent increase in the number of teachers who need to join in 2019/20, while there are smaller increases for geography and history. Other subjects see a decrease, with design and technology subject to a reduction of 31 per cent in 2019/20, for example.



The net effect of this for English, geography and history is an increase in projected ITT requirements, but, in most other subjects, the TSM forecasts a decrease. As a precaution, all EBacc subjects have their targets held at 2016/17 levels if a reduction is otherwise forecast. The new target for postgraduate secondary teacher training recruitment is 30,847 for 2017/18, a 6 per cent increase on 2016/17 (leading to the bulge in entrants to schools in 2018/19 shown earlier). Without the adjustment for EBacc subjects there would only have been a 2 per cent increase.

There is also an increase of 6 per cent for primary teaching, despite growth in pupil numbers in this phase slowing - this is a result of the model taking into account recent increases in teacher leaving rates and a growing reliance on NQTs as a source of new teachers.

⁸ Conservative and Unionist Party, 2017, 'Forward, together: our plan for a stronger Britain and a Prosperous Future', <https://www.conservatives.com/manifesto>

Whilst recruitment targets have increased, applicants to initial teacher training in the 2017/18 round reported in June were 3 per cent lower than the number recorded at the same point last year.⁹ There remains, therefore, significant challenges for teacher supply.

Further increases in bursaries should not be relied upon

In recent years, the main response to recruitment difficulties has been to raise training bursaries and scholarships for trainees on non-salaried training routes. These vary in value from zero for most primary school trainees, and those with no more than a lower second class degree in non-shortage secondary subjects, to £30,000 for those graduating with a first class degree or a PHD. Around £170m was planned to be spent on bursaries and scholarships in 2016/17.¹⁰

It is very difficult to establish the effect of such incentives. According to the National Audit Office, the Department's estimates have previously been that an increase in bursary value of £1,000 leads to a 2.9 per cent increase in applications.¹¹ Whilst this estimate is likely to be a rough guide, and does not differentiate between subjects, the implied *marginal* cost of increasing recruitment by raising bursaries can be illustrated using data on 2016/17 recruitment levels. In that year, graduates with an upper second class degree could receive a £25,000 bursary to train in mathematics. 900 students enrolled on fee-paying ITT in this subject that year, and with the TSM targets not binding in this case it is reasonable to assume that increases in applications might correspond closely with increases in enrolment. An increase in the bursary to £26,000 might therefore – applying a 2.9 per cent uplift to enrolment numbers – lead to 23 additional recruits with upper second class degrees.

However, all of the existing recruits would also have to be given a bigger bursary. This 'deadweight' means that the implied total cost for each *additional* trainee from raising the bursary to £26,000 is actually £60,500. A similar figure is obtained through the equivalent calculation for maths, but for design and technology, which had a lower bursary level of £9,000 in that year, there is an estimated marginal cost of £44,500.

Driven by the need to find more effective ways to expand recruitment in shortage subjects, and led by the £67m 'STEM package' announced in 2014, the Department has embarked upon efforts to attract returning teachers, retrain existing ones, and enable students to opt into teaching at an earlier point during undergraduate study. According to the TSM, the proportion of new MFL teachers expected to come through ITT is not expected to rise significantly, so it is relying on such other means, and engagement in Spain's Visiting Teacher Partnership scheme, to support recruitment of an extra 733 MFL teachers in 2018/19 over its ITT targets for last year.¹²

Initial research into four interventions for maths and physics teachers, published last week, showed mixed perceptions of outcomes. There was a range of positive feedback from participants in undergraduate paid internships (of which there were 265, against a target of 200) and Teacher

⁹ UCAS, 2017, 'UTT monthly statistics: applicants', Report A: UCAS Teacher Training applicants at Monday 19 June 2017, <https://www.ucas.com/file/114531/download?token=mBvIxSXR>; UCAS, 2016, 'UTT monthly statistics: applicants', Report A: UCAS Teacher Training applicants at Monday 20 June 2016, <https://www.ucas.com/file/67636/download?token=z9aHnXTn>

¹⁰ National Audit Office, 2016, 'Training new teachers', <https://www.nao.org.uk/wp-content/uploads/2016/02/Training-new-teachers.pdf>

¹¹ National Audit Office, 2016, 'Training new teachers', <https://www.nao.org.uk/wp-content/uploads/2016/02/Training-new-teachers.pdf>, page 34

¹² <https://www.gov.uk/guidance/spains-visiting-teachers-programme>; Department for Education, 2017, 'Teacher Supply Model 2017/18'; House of Commons, 2017, 'Recruitment and retention of teachers: Government Response to the Committee's Fifth Report Recruitment and retention of teachers: Government Response to the Committee's Fifth Report', <https://www.publications.parliament.uk/pa/cm201617/cmselect/cmeduc/638/63802.htm>

Subject Specialism Training (TSST) (of which there were 2,978 participants against a target of 3,000). However, teachers attempting to return to the state funded sector who were provided with advice on training and accessing schools under the Return to Teaching (RTT) pilot often found the existing training lacking and the encouragement offered by schools inadequate. PhD researchers trained and placed in schools under the Maths and Physics Chairs programme, combining research with teaching and promotion of their subject, often found the salary uplift a good incentive to start a teaching career but encountered schools ill-equipped to support their research commitments.¹³

Earlier this year, it was reported that 62 schools participated in the ‘Support for Returning Teachers’ pilot over a year from September 2015. They recruited 426 teachers of EBacc subjects to their training schemes, of which only 49 were employed as teachers by November 2016. This scheme, as for the RTT pilot, appears to have come up against the challenge of finding part time roles in schools. With a grant cost of £584,775, the cost per teacher employed was around £11,900.¹⁴ Even assuming each of these teachers would not have been employed without the scheme, that is a considerable expense. However, based on the analysis above, it does not appear to be more expensive than raising recruitment by increasing bursaries, at least for STEM teachers. The Department should persevere with these schemes for the time being, and ensure that lessons learned can be taken on board by MATs and training providers more widely.

The level – and distribution – of teacher pay may also restrict recruitment

Such schemes will only be successful if teaching is a sufficiently attractive profession. Manifestos for the 2017 general election contained a range of proposals that reflected what appears to be a consensus about the importance of working conditions and teacher development in relation to teacher supply.¹⁵ In their latest report, published this week, the School Teachers’ Pay and Review Body (STRB) note that teachers’ median earnings have grown more slowly over the last decade than those of other public or private sector earnings, with deteriorations in relative pay in all regions.¹⁶ Based on surveys of graduates, they estimate that, in 2015, teachers’ starting pay was lower than the median starting pay of other graduate professionals in all regions except Inner London and the North West, with a gap of 10 per cent in the South East.

Teachers reaching the top of pay scales see significant increases over the first ten years of their careers. Starting salaries for secondary school teachers in England are 16 per cent below the OECD average, whilst those for teachers with 15 years’ experience are 4 per cent higher than the average.¹⁷ However, the STRB present Incomes Data Research analysis suggesting that the average increase in salaries over the first 5 years of careers has been of 52 per cent for teachers, compared with 60 per cent for other graduates.¹⁸ Whilst delayed compensation can provide some incentive to develop teaching careers for future gain, new teachers appear to face a poor deal in the short term, all things considered: those with fewer than six years’ experience work on average 5 more hours per

¹³ Straw, S., Poet, H., Worth, J., Coldwell, M., Byrne, E. and Stiell, B., 2017, ‘Maths and physics teacher supply package: Research report’, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/624769/Maths_and_physics_teacher_supply_package-report.pdf

¹⁴ TES, 19 May 2017, ‘Exclusive: More than £500K to bring 49 teachers back to the profession’, <https://www.tes.com/news/school-news/breaking-news/exclusive-more-ps500k-bring-49-teachers-back-profession>

¹⁵ Education Policy Institute, 2017, ‘General election 2017: An analysis of manifesto plans for education’, http://epi.org.uk/wp-content/uploads/2017/05/EPI_Manifesto_Analysis_GE2017.pdf

¹⁶ School Teachers’ Review Body, 2017, ‘School Teachers’ Review Body 27th report: 2017’, Chart 4, <https://www.gov.uk/government/publications/school-teachers-review-body-26th-report-2016>

¹⁷ OECD, 2016, ‘Education at a Glance 2016’, <http://www.oecd.org/edu/education-at-a-glance-19991487.htm>

¹⁸ School Teachers’ Review Body, 2017, ‘School Teachers’ Review Body 27th report: 2017’, Chart 7, <https://www.gov.uk/government/publications/school-teachers-review-body-26th-report-2016>

week than those with more than eleven.¹⁹ The odds of a teacher leaving the primary sector are 36 per cent greater for those 2 years into their careers than those with 6-10 years' experience (for secondary teachers they are 53 per cent more likely to leave).²⁰

Longer term, their report expresses concern that the situation will deteriorate further if pay policy continues to be limited by the 1 per cent public sector pay cap.²¹ Limiting salary uplifts to 1 per cent between now and 2019-20 will leave them 5 per cent short of where they would have been if they had increased in line with average earnings. Previous evidence suggests that will make it harder to recruit teachers and harder to keep them.²² It could also affect the quality of teaching: Britton and Propper (2016) found that an increase in the local wage gap between teachers and other workers of 10 per cent was associated with a loss of 2 per cent in average school performance in England.²³

These risks do not apply evenly. The chart below reports analysis by the Migration Advisory Committee, showing the extent to which graduates from STEM subjects more often have – in terms of pay at least – better outside options. Teacher salaries vary less by field than they do in other professions.²⁴

¹⁹ CFE and IER for Department for Education, 2017, 'Teacher Workload Survey 2016', <https://www.gov.uk/government/publications/teacher-workload-survey-2016>

²⁰ Department for Education, 2017, 'Analysis of teacher supply, retention and mobility', https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/615729/SFR33_2017_Text.pdf

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²² Hutchings, M., 'What impact does the wider economic situation have on teachers' career decisions? A literature review', June 2011: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/181566/DFE-RR136.pdf

²³ Britton, J., and Propper, C., 2016, 'Teacher pay and school productivity: Exploiting wage regulation', <http://www.sciencedirect.com/science/article/pii/S004727271500208X>

²⁴ Migration Advisory Committee, 2017, 'Partial review of the Shortage Occupation List', https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/585998/2017_01_26_MAC_report_teachers_SOL.pdf,



It is very difficult for employers to reduce nominal salaries in response to changing economic conditions, given the likely impacts on staff morale and implications for industrial relations. The only practical way schools could address the disparities in relative pay across levels of experience and subject, assuming they wanted to, would be by holding some teachers' pay fixed while offering increases to others, or by offering recruitment and retention allowances targeted especially to new teachers. In a time of restricted average pay and budget constraints this is especially difficult, regardless of the freedoms over pay that schools have been granted recently. Addressing these disparities through progression pay for the existing stock of teachers would also create a conflict with the principle – embedded in the statutory guidance for pay in maintained schools – of performance-related pay progression: we should not necessarily expect new teachers in shortage subjects to show above-average improvements in performance.²⁵

Overall, the STRB see teacher pay as an important factor contributing to a deterioration in recruitment and retention, combining with recent reductions in the size of the graduate labour market pool due to demographic trends. They argue for uplifts to close pay gaps, with the priority this year being to support early career teachers. As such, they recommend increasing the minimum and maximums of the main pay range by 2 per cent for teachers in maintained schools, with 1 per cent increases to other limits – this has been accepted by the Government.²⁶

The limits of autonomy?

The Government's current position is that the public sector pay cap will stay for the time being. In the case of teachers, however, the implications for recruitment, retention and delivery of EBacc

²⁵ Department for Education, 2016, 'School teachers' pay and conditions document 2016 and guidance on school teachers' pay and conditions', https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/550286/STPCD_2016_guidance.pdf

²⁶ School Teachers' Review Body, 2017, 'School Teachers' Review Body 27th report: 2017', <https://www.gov.uk/government/publications/school-teachers-review-body-26th-report-2016>

ambitions have clearly been recognised. The Conservative Manifesto promised forgiveness on student loan repayments to help new teachers remain in the profession.²⁷ For someone earning £25,000, avoiding their 9 per cent contribution of earnings over £21,000 would amount to a saving of £360, or 1.4 per cent of their salary. For someone earning £35,000, it would be worth £1,260, or 3.6 per cent. The details of the scheme have not been released, but EPI's recent analysis of the manifestos outlined one scenario where the annual loss of repayments could rise to £160m within 10 years.²⁸ This represents a cost to the student loan book comparable to the current bursaries budget, with the long-term effects dependent on how the associated debts are adjusted.

In principle, these benefits could be targeted according to degree subject, and could have better implications for retention than bursaries currently do. The proposal may therefore prove to be a pragmatic approach that targets limited additional funding to need better than simply lifting pay caps and increasing school budgets, but it will add further complexity to the teaching career offer and could generate administrative costs. It could also be seen as inconsistent with recent efforts – including the academies programme and revisions to maintained school pay guidance – to give schools more control over staffing and pay. If the Government chose to act on the STRB's warnings over future recruitment, it must carefully consider the relative benefits of further Department-led intervention and the alternative of increasing funding to schools to allow them to respond as they see fit.

²⁷ Conservative and Unionist Party, 2017, 'Forward, together: our plan for a stronger Britain and a Prosperous Future', <https://www.conservatives.com/manifesto>

²⁸ Education Policy Institute, 2017, 'General election 2017: An analysis of manifesto plans for education'. http://epi.org.uk/wp-content/uploads/2017/05/EPI_Manifesto_Analysis_GE2017.pdf