

# Position Statement

## The recruitment and retention of chemistry teachers in England

Last reviewed: 2019

### Summary

The issue of teacher supply is particularly concerning for the Royal Society of Chemistry because chemistry teachers are amongst those most likely to:

- Leave the profession
- Leave within the first five years of qualifying
- Move between schools<sup>1</sup>

In addition...

- Schools find it hard to fill science vacancies
- There are not enough new chemistry teachers being trained

We believe that the best way to solve the chemistry-teacher supply problem in England is to improve working conditions for teachers. This will help retain the current workforce and make it a more attractive career option for new entrants and returners.

### Introduction

In 2017 just over 10% of chemistry teachers in state-funded schools left the profession for reasons other than retirement<sup>2</sup>. This has gradually risen from around 7% in 2011.<sup>3</sup> At the same time, the number of people training to be chemistry teachers has frequently been below government targets.<sup>4</sup>

Ensuring an adequate supply of chemistry teachers is a complicated issue. Demand is affected by the size of the pupil population and the extent to which teachers' disciplinary expertise is considered important.

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<sup>1</sup> High teacher turnover is associated with reduced student attainment. Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). *How teacher turnover harms student achievement*. American Educational Research Journal <http://cepa.stanford.edu/sites/default/files/TchTrnStAch%20AERJ%20RR%20not%20blind.pdf>

<sup>2</sup> Teachers who leave the state-funded school sector are recorded as having left the profession. They may still be teaching in private schools, sixth-form colleges or as supply teachers employed through an agency

<sup>3</sup> DfE. (2018, September). *Teachers analysis compendium 4*. <https://www.gov.uk/government/statistics/teachers-analysis-compendium-4>

<sup>4</sup> DfE. (2018, November). *Initial Teacher Training (ITT) Census for the academic year 2018 to 2019, England* <https://www.gov.uk/government/statistics/initial-teacher-training-trainee-number-census-2018-to-2019>

Supply is affected by the recruitment of new and retention of existing teachers. The state of the economy and the availability and attractiveness of other employment opportunities for chemistry graduates, will affect the recruitment and retention of teachers.

Chemistry teachers with good subject and pedagogical content knowledge can influence students' decisions to continue their chemistry studies. More inspirational chemistry teachers in schools will encourage more students to study chemistry. This in turn will increase the pool of chemistry graduates from which many new teachers are drawn.

Both supply of and demand for chemistry teachers can show regional and local variation as well as variation by type of school. This is an issue because the Department for Education's (DfE), Teacher Supply Model along with most teacher recruitment and retention incentives, only consider national needs.

### **Our recommendations**

Good working conditions are key to retaining the existing workforce and making chemistry teaching a more attractive career for potential new or returning teachers.

A key factor in this is unsustainable workload. This is the reason most often cited for why teachers leave the profession.<sup>5</sup> Chemistry trained teachers are often required to teach biology and/or physics. This is likely to increase the time spent on lesson preparation and could mean that teachers of the sciences have to cope with a higher than average workload.

Government should:

1. Ensure that effective strategies are in place to:
  - a. Address unsustainable science/chemistry teacher workload.
  - b. Promote a culture of support and development for teachers in schools (including Continuing Professional Development (CPD) and mentoring)<sup>6</sup> in which teachers are trusted to take ownership and control of their own development.
  - c. Invest in leadership and management programmes for school leaders which support a positive employment culture and address issues associated with poor teacher retention.<sup>7</sup>
2. Investigate why teachers of the sciences have below average retention rates, and then initiate tailored, evidence-based initiatives to address the issues.

School leaders and heads of science departments should:

3. Investigate and evaluate science/chemistry teacher workload in their schools and introduce strategies to address excessive workload where it occurs. This could involve initiatives relating to timetabling, planning, marking, technician support, professional development or mentoring.

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<sup>5</sup> National Audit Office. (2017, September). *Retaining and developing the teaching workforce*. <https://www.nao.org.uk/wp-content/uploads/2017/09/Retaining-and-developing-the-teaching-workforce.pdf>

<sup>6</sup> See our policy position on Continuing Professional Development (CPD) of secondary-school teachers of chemistry in England

<sup>7</sup> We welcome the Government's *Recruitment and Retention Strategy* (2019) which commits to addressing some of the key issues affecting teacher supply. <https://www.gov.uk/government/publications/teacher-recruitment-and-retention-strategy>

4. Consider how part-time and flexible working options can be used to support teacher retention in their schools.

Ofsted should:

5. Assess how effective schools are at supporting and retaining teachers.<sup>8</sup>

Unless teaching is considered a rewarding career option compared to the alternatives available to chemistry graduates, attracting enough suitably knowledgeable new chemistry teachers will be a challenge. We acknowledge that at least in the short term, financial incentives and Subject Knowledge Enhancement (SKE) courses (especially for people without a chemistry degree), have the potential to help reduce the chemistry teacher shortage.

Government should:

6. Evaluate existing teacher recruitment and retention incentives to assess their effectiveness and value for money. This evaluation should include consideration of the suitability of the eligibility criteria used.<sup>9</sup>
7. Ensure that any new teacher training financial incentives not only help to recruit new teachers into the profession but also encourage their retention.
8. Ensure that recruitment and retention incentives consider local, regional and national teacher shortages.
9. Ensure that high-quality DfE funded SKE courses in chemistry include a minimum of 10% chemistry practical work and are available and accessible for those without a relevant degree or up-to-date subject knowledge.<sup>10</sup>
10. Instigate funded training and development (such as Teacher Subject Specialism Training (TSST)<sup>11</sup> or post-ITT SKE) for in-service teachers (most likely those trained to teach biology) to give them the pedagogical skills and disciplinary expertise to teach chemistry.
11. Ensure that teacher training place allocations take account of workforce demographics, changes in curricula qualifications and accountability measures (all of which may affect the number of

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<sup>8</sup> We were pleased to see specific mention of leaders taking account of the pressures on school staff and in particular, their workload and wellbeing in Ofsted's new Education Inspection Framework, which comes into force in September 2019, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/801429/Education\\_inspection\\_framework.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/801429/Education_inspection_framework.pdf)

<sup>9</sup> See our policy position on the role of financial incentives for the recruitment and retention of chemistry teachers in England

<sup>10</sup> See our policy position on SKE

<sup>11</sup> TSST courses are currently available in physics, maths and modern foreign languages see for details <https://www.gov.uk/guidance/teacher-subject-specialism-training-courses>

teachers needed), the movement of teachers into and out of the profession and national, regional and local need.

In order to track the long-term effectiveness of teacher recruitment and retention, government should:

12. Collect and publish discipline-specific information about the 'general/combined science' teachers recorded in the School Workforce Census. In particular, whether they have post-A Level qualifications relevant to the individual science discipline content they teach within general/combined science courses.
13. Ensure that the Teacher Supply Model makes predictions based on the premise that a roughly equal amount of time should be spent teaching biology, chemistry and physics content at both key stages three and four.

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