

## SECONDARY SCHOOL CURRICULUM AND STAFFING SURVEY 2007

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### Introduction

The Secondary School Curriculum and Staffing Survey (SSCSS) has been carried out every four to six years since 1965. The 2007 survey was carried out by the National Foundation for Educational Research (NFER), on behalf of the Department for Children, Schools and Families (DCSF).

### Aim

The aim of this survey was to create a picture of the secondary school teaching workforce in terms of teachers' qualifications and the curriculum subjects they taught. It was important that the results of the survey were comparable with those produced in the last SSCSS which was carried out in 2002, in order to observe change over time. Teachers' post A-level qualifications were matched to the subjects they taught to demonstrate the proportions of teachers with qualifications relevant to the subjects they delivered in the classroom. Teachers' highest post A-level qualifications were selected against each subject they taught, counting a degree or a higher degree as the highest followed by BEd, PGCE, Certificate in Education and then other types of post A-level qualification. The results of the survey will be used to inform policy and to set teacher training places by curriculum subjects.

### Key findings

- Ninety-six per cent of teachers' highest post A-level qualification was a degree, a higher degree, a BEd, or a PGCE;
- In thirteen of the twenty nine subject categories used in the analysis of the survey data, over 70% of teachers held a post A-level qualification in a subject relevant to the subject they taught;
- The proportions of teachers with post A-level qualifications in the subjects they taught varied across subjects from less than 20% in some subjects (eg Careers Education at 7%) to over 80% in others (eg Music at 87%);
- The subjects with the highest proportions of post A-level qualified teachers were Chemistry, Biology and Physics<sup>1</sup> where 90% and over of teachers had post A-level qualifications in relevant subjects; and
- Analysis of the qualification subjects of all science teachers demonstrated the relative proportions of science<sup>2</sup> specialisms within schools, showing that 32% of specialisms were in Biology, 22% were Chemistry, 22% were Physics, 16% were Other Science and 8% were non-science.

<sup>1</sup> Teachers qualified in Combined/General Science were treated as qualified to teach Biology, Chemistry and Physics. Teachers qualified to teach Biology, Chemistry and Physics were treated as qualified to teach Combined/General Science.

<sup>2</sup> This was not applied to the analysis of science specialisms where more specifically related subjects were used to assign a specialism.

- The 2007 survey results showed a ten percentage point increase overall in the proportions of teachers with degrees or higher degrees in the subjects they taught compared to the 2002 survey. The proportions of teachers with Certificates in Education and BEds were four and three percentage points less, respectively, in 2007 compared to 2002. Overall there were higher proportions of teachers with relevant post A-level qualifications in the subjects they taught in 2007 compared to 2002 (by five percentage points across all subjects).
- Across all subjects, the proportion of lessons being taught by teachers with relevant post A-level qualifications was slightly lower in 2007 (79%) than it had been in 2002 (83%).
- In most subjects teachers under 40 years of age were more likely to have post A-level qualifications that related to the subjects they taught than older teachers.
- In most subjects, Grammar schools had higher proportions of teachers with post A-level qualifications relevant to the subjects they taught than in other types of school.
- In more than half of the subject categories, schools with the smallest numbers of pupils eligible for free school meals had higher proportions of teachers with relevant post A-level qualifications than those with the highest numbers. Across all subjects the proportion of teachers with no relevant post A-level qualifications in the subjects they taught was 35% in the lowest quintile of free school meals entitlement compared to 44% in the highest quintile.
- There were higher proportions of Advanced Skills Teachers with relevant post A-level qualifications in the subjects they taught than other types of teacher. QTS classroom teachers and post-threshold teachers delivered the majority of periods in schools, and QTS classroom teachers had higher levels of post A-level qualifications than post-threshold teachers.
- Across all subjects there were higher proportions of teachers with degrees in their taught subjects in the exam years (years 9, 11, 12 and 13) compared to the non-exam years (years 7, 8 and 10). The proportions of periods taught by teachers with relevant post A-level qualifications in the subjects they taught was 81% in the exam years, compared to 78% in the non-exam years.
- In 2007, there was evidence that a large number of schools had teachers with qualifications that related to some of the new Diploma subjects. Over 70% of schools had at

least one teacher with a post A-level qualification in subjects related to seven of the first fourteen lines of learning.

## Methods

Data were collected on teachers' age, gender, role in school, full and part time status, qualifications, subjects taught and numbers of periods taught by subject.

Survey forms were sent to a sample of 438 maintained secondary schools in England. Of those, 327 schools submitted completed forms. Teacher data were collected from 14,137 teachers from these schools, which on average represented a 66% response rate at teacher level. The sample was representative of the population in terms of key school factors and of teachers' roles in school. Schools involved in the survey were offered a range of different methods for returning their data. This was put in place to make it as easy as possible for schools to participate and to give the opportunity to provide data that was already held electronically in school management or other systems. The vast majority of schools (90%), however, opted to return their data on paper forms completed by each teacher. This was probably the easiest option as most schools did not hold all of the required data in a single electronic system.

The survey forms asked for teachers' role in school based on the following categories; headteacher, deputy headteacher, assistant headteacher, advanced skills teacher, excellent teacher, post-threshold teacher, QTS classroom teacher and non-QTS classroom teacher<sup>3</sup>. The subjects that teachers' taught and the subjects of their qualifications were collected in open format. Both subjects and qualifications were coded, linked and categorised to form comparisons with the results of the 2002 survey.

The data collected from the survey was only from a sample of teachers. To represent the national figures and to remove any biases due to sample design, it was necessary to produce weighting factors to represent the national population. The grossing took into account school type and school size. The grossing method used was modelled on the method used in the 2002 survey analysis.

<sup>3</sup> Non-QTS classroom teachers were teachers who had not yet gained qualified teacher status and post-threshold teachers were identified as a separate group from QTS classroom teachers in this survey.

In order to present a full picture of the whole secondary teaching workforce including all full and part time teachers, the 2007 analysis was based on full time equivalent numbers of teachers. However, where comparisons have been made with the results of the 2002 survey, the analysis only includes full time teachers, as was the case in 2002.

The findings in this summary are based on the analysis of full and part time teachers, apart from where comparisons have been made with the 2002 survey results where analysis of full time teachers only has been quoted. All differences between the 2007 and the 2002 results quoted in this summary were statistically significant.

## Discussion of findings

### The qualifications of the teaching workforce

Eighty-one per cent of teachers had a degree or a higher degree as their highest post A-level qualification. Twelve per cent had BEds and 3% had a PGCE but not a degree in the same subject. Only 3% had a Certificate of Education and 2% had other types of post A-level qualification. Only the highest qualification was counted in these percentages, with degree or higher degree counted as highest, followed by BEd, then PGCE, then Certificate in Education and then other post-A level qualifications.

Younger teachers were more likely to have degrees than their older colleagues. For example, 94% of teachers under the age of 25 had a degree compared to 64% of teachers between the ages of 50 to 54. There were noticeably smaller proportions of teachers with BEds amongst teachers under 40 than older teachers. Certificates in Education were mainly held by teachers over 44, reflecting the time when these qualifications were discontinued.

There were differences in the type of post A-level qualifications amongst teachers with different roles in school. Headteachers and QTS classroom teachers had the highest proportion of degrees when compared to other teachers. Post-threshold teachers had the lowest proportion of degrees compared to other roles in school and higher proportions with Certificates in Education than others. This was consistent with the older age profile of post-threshold teachers and that larger proportions of younger teachers were coming in to the profession with degrees than their older colleagues. Non-QTS classroom

teachers had the highest proportions of teachers with 'other' post A-level qualifications.

### The qualifications of teachers in subjects taught

In 23 out of 29 subject categories, the majority of teachers with a post A-level qualification in the subject they taught held a degree or higher degree in that subject. The proportions of teachers holding BEds and PGCEs were relatively low compared to those holding a degree, however there were markedly higher proportions of these in some subjects. Higher proportions of teachers with BEds were observed in Design and Technology (12%) and Physical Education (25%) compared to an average of 7% across all subjects. In Design and Technology this was perhaps related to there being a relatively high proportion of older teachers in the subject and that older teachers tended to hold more BEds. Physical Education had a young age profile of teachers but still had high proportions of teachers with BEds, indicating perhaps that BEds were a more popular route into teaching this subject compared to other subjects. Higher proportions of teachers with PGCEs (but no degree in the subject) were seen in Mathematics (14%), Combined and General Science (15%) and Art and Design (15%) compared to 7% across all subjects.

The subjects with the highest proportions of post A-level qualified teachers were Chemistry, Biology and Physics all of which had over 90% of teachers with a post A-level qualification in the subject. English, Mathematics, Combined and General Science, German, French, Geography, History, Music, Art and Design and Physical Education had between 70% and 89% of teachers with relevant post A-level qualifications. Some subjects had much lower proportions of post A-level qualified teachers, including ICT with 41%, Religious Education with 47%, Business Studies with 50% and Design and Technology with 53%. Only 7% of teachers teaching Careers Education<sup>1</sup> and 5% of teachers teaching Citizenship<sup>4</sup> held any related post A-level qualifications.

Overall the proportion of teachers holding some kind of post A-level qualification in the subjects they taught was five percentage points higher in

<sup>4</sup> Only qualifications specifically in Citizenship and Careers Education were counted as related post A-level qualifications for these subjects.

2007 than in 2002. There were changes in terms of the proportions of teachers holding different types of post A-level qualification. Overall there was an increase in the proportion of teachers with degrees by ten percentage points across all subjects. There was a three percentage point decrease in the proportions of teachers holding BEds and a four percentage point decrease in the proportions of teachers holding Certificates in Education across all subjects.

In some subjects there were marked differences between the survey results of 2007 and 2002, in terms of different levels of post A-level qualification. In Physical Education the proportion of teachers with degrees in related subjects rose to 50% in 2007 compared to 25% in 2002. In Design and Technology the overall proportion of teachers with a post A-level qualification decreased with 46% in 2007 compared to 76% in 2002. The proportion of teachers with Certificates in Education in Design and Technology had fallen to 2% in 2007 from 21% in 2002, which linked to a considerable drop in the proportion of teachers in the over 50 age group.

### **Qualifications by background factors**

There were higher proportions of post A-level qualifications amongst younger teachers than older teachers. Younger teachers were more likely to hold a degree than their older colleagues who were more likely to have BEds and Certificates in Education. For example, in English 73% of teachers under 30 had a degree compared to 43% of teachers in the over 50 age band. In Physics, 79% of teachers aged under 30 had a degree in Physics or a related subject compared to 70% of teachers aged over 50.

Analysis of qualifications by role in school showed that Advanced Skills Teachers had the highest levels of relevant post A-level qualifications in many subjects. For example, in Mathematics 76% of Advanced Skills Teachers teaching the subject had a degree compared to 50% of QTS classroom teachers, and 47% of post-threshold teachers.

There were differences in the proportions of teachers' qualifications in subjects taught between different school types. Across all subjects, Grammar schools had the highest proportion (67%) of teachers with relevant post A-level qualifications in the subjects taught, followed by Comprehensives to 18 (64%) and Comprehensives to 16 (60%).

In most subjects there were higher proportions of teachers with relevant post A-level qualifications in schools with small numbers of pupils eligible for free school meals (FSM) compared to schools with high numbers of these pupils. For example, in Geography 85% of teachers had relevant post A-level qualifications in the schools with the lowest numbers of pupils eligible for FSM, compared to 65% in the schools with the highest numbers of these pupils. Although this was broadly true for most subjects, the opposite was seen in Design and Technology and ICT where higher proportions of teachers with post A-level qualifications were in schools with high numbers of pupils eligible for FSM.

There were small variations between the levels of post A-level qualifications by subject when broken down into geographical regions. In general teachers in London held slightly higher proportions of post A-level qualifications related to the subjects they taught compared to teachers in other areas, across all subjects. The Eastern region had slightly lower proportions of teachers with post A-level qualifications in the subjects they taught. The differences between regions were fairly small, where the largest difference in the proportion of teachers holding relevant post A-level qualifications was between London (64%) and Eastern region (58%).

### **Subject periods taught by teachers with different levels of post A-level qualification in related subjects**

Data were collected on periods taught and analysed to illustrate the proportions of periods taught by teachers with different levels of post A-level qualifications. Overall the majority of periods were taught by teachers holding relevant post A-level qualifications. In Mathematics, English, Biology, Chemistry, Physics, French, German, History, Geography, Music, Art and Design and Physical Education over 80% of periods were taught by teachers with post A-level qualifications in related subjects. In Design and Technology and ICT the figures were lower with only 70% and 55%, respectively, of periods taught by teachers with post A-level qualifications in relevant subjects.

The majority of periods taught by teachers with post A-level qualifications were by teachers with degrees rather than other types of qualification. One of the few exceptions to this was Design and Technology where only 33% of periods were taught by teachers with degrees in related subjects and 39% were taught by teachers with

other types of post A-level qualification, in related subjects.

Comparing the analysis of periods taught to the analysis of the proportions of qualified teachers in each subject it was clear that teachers with relevant post A-level qualifications taught more periods than their colleagues with no relevant post A-level qualifications.

The 2007 analysis was compared to the results of the 2002 survey. This showed that for most subjects there had been an increase in the proportions of periods being taught by teachers with degrees in relevant subjects. However, this was outweighed by a decline in the proportions of periods taught by teachers with BEds and Certificates in Education since 2002. Overall taking these factors together meant that there was a small increase in the proportions of periods taught, in 2007, by teachers with no post A-level qualifications in the subjects taught for most subjects compared to 2002. For example, in English the proportion of periods taught by teachers with degrees was eleven percentage points higher in 2007 compared to 2002, the proportion of English periods taught by teachers with BEds was seven percentage points lower in 2007 compared to 2002, those delivered by teachers with Certificates in Education was four percentage points lower in 2007 compared to 2002 and overall the proportion of English periods delivered by teachers with no relevant post A-level qualifications was slightly higher in 2007 (10%) compared to 2002 (9%). Similarly, in Physics 91% of periods were taught by post A-level qualified teachers in 2007 compared to 94% in 2002.

In Mathematics, the Science and Innovation Investment Framework 2004-2014: next steps report (HM Treasury, 2006) set a target that by 2014 95% of lessons will be taught by Mathematics specialists. The analysis of the SSCSS data shows a small, but statistically significant, decline in the proportions of lessons taught by teachers with qualifications relevant to Mathematics since 2002. In 2007, 84% of periods were taught by teachers with relevant post A-level qualifications compared to 88% in 2002.

When the proportions of periods taught were broken down by year group there was an overall trend in which higher proportions of periods were taught by teachers with relevant post A-level qualifications in the older year groups compared to the younger years. Over all subjects the proportion of lessons taught by teachers with

related post A-level qualifications went up as the pupils got older.

Splitting the analysis by exam years (years 9, 11, 12, 13) and non-exam years (years 7, 8, 10) showed that higher proportions of periods were given by teachers with relevant post A-level qualifications in the exam years compared to the non-exam years. Across all subjects the proportions of periods offered by post A-level qualified teachers in the exam years was three percentage points higher than for the non-exam years. In most subjects, there were higher proportions of periods taught in the exam years by teachers with relevant degrees than in the non-exam years. For example, in Chemistry 86% of periods taught within exam years were given by teachers with degrees compared to 79% in the non-exam years.

### **Subject periods taught by background factors**

The analysis of periods taught by teachers with different levels of post A-level qualifications was broken down by teacher level and school level background factors. This analysis showed little difference in the patterns of periods taught by post A-level qualified male and female teachers. However, there were distinct trends in terms of other background factors and these were consistent with the observations made in relation to the qualifications of teachers in the subjects they taught.

In terms of age, in most subjects, younger teachers with relevant post A-level qualifications delivered higher proportions of periods than older colleagues. The proportions of periods taught by post A-level qualified teachers generally declined as the teachers got older. For example, in Business Studies, in the under 30 age group, 81% of periods were taught by teachers with a relevant post A-level qualification. This was considerably higher than for Business Studies teachers in the over 50 age group where only 56% of periods were taught by teachers with relevant post A-level qualifications.

When looking at the qualifications of teachers in the subjects taught, Advanced Skills Teachers had high levels of post A-level qualifications compared to teachers with other roles. However, Advanced Skills Teachers formed a very small proportion of the workforce represented in this analysis and so delivered very small proportions of the total periods taught. Most periods were delivered by QTS classroom teachers and post-threshold teachers, both groups having fairly high

proportions of teachers with relevant post A-level qualifications. Of those periods taught by QTS classroom teachers slightly higher proportions were given by teachers with relevant post A-level qualifications compared to those delivered by post-threshold teachers.

In most subjects Grammar schools provided higher proportions of lessons delivered by teachers with relevant post A-level qualifications, and in particular degrees, than other types of schools. The next highest proportions were in Comprehensives to 18 and then Comprehensives to 16. Across all subjects 68% of periods in Grammar schools were taught by teachers with degrees compared to 59% in Comprehensives to 18 and 52% in Comprehensives to 16.

Schools with the highest proportions of pupils eligible for free school meals had smaller proportions of periods taught by teachers with post A-level qualifications related to the subjects taught. Higher proportions of periods were taught by teachers with degrees in subjects taught in schools with the least pupils eligible for free school meals compared to those with the highest. For example, in Mathematics 64% of periods taught in the lowest quintile of free school meals were given by teachers with degrees in related subjects compared to 44% of periods in the highest quintile.

## Diplomas

From September 2008, the first of the new Diplomas will be offered by some schools and colleges. These new Diplomas will be available to 14 to 19 year olds as an alternative way of learning and a new route into Higher Education. The first five Diplomas will be introduced in September 2008, followed by the next five in September 2009 and the next four in 2010. In October 2007, the DCSF announced the introduction of a further three diplomas in Languages, Science and Humanities. The analysis in this report was undertaken before this announcement and so the findings in this report relate only to the first fourteen lines of learning<sup>5</sup>.

The Diplomas cover a wide range of topics within their industry area and each includes functional skills in Mathematics, English and IT. Individual schools will not be expected to be able to offer

<sup>5</sup> The subjects covered by the first fourteen diplomas were finalised after the analysis for this report was undertaken, however the analysis in this report should still provide a good indication of the situation in 2007.

the whole range of Diplomas independently and so the Diplomas will be offered by groups of schools and colleges working in partnership with employers and other providers.

The subjects taught and qualification data collected in the 2007 survey were linked to the areas covered by each Diploma to create an indicative picture of what was already on offer in schools and what qualifications teachers had in relation to the Diploma lines of learning.

The analyses showed that high proportions of schools had at least one teacher with qualifications related to aspects of nine out of the first fourteen lines of learning. These were Business Administration and Finance, Manufacturing and Product Design, Land Based and Environmental, Society, Health and Development, Engineering, IT, Creative and Media, Sport and Leisure and Hospitality and Catering. For example, over 40% of schools had at least one teacher with a post A-level qualification specifically in Engineering. The Diplomas where there appeared to be very few teachers with relevant post A-level qualifications were Hair and Beauty, Travel and Tourism, Retail and Public Services.

Analysis of subjects taught in the survey showed that a number of aspects of the Creative and Media, IT and Sport and Leisure and Business Studies Diplomas were being taught in schools in 2007. As would be expected, in the other Diplomas, very few schools were offering aspects of the lines of learning.

## Conclusion

The results of the 2007 survey showed an overall increase in the proportions of teachers with degrees in the subjects they taught by ten percentage points compared to the 2002 survey. The proportions of teachers with degrees in subjects relevant to the subjects they were teaching were higher amongst younger teachers coming into the profession than older teachers. If this trend were to continue then the levels of post A-level qualifications in relevant subjects may rise over the coming years. Despite these positives, 25% of teachers of Mathematics and 21% of teachers of English did not hold any related post A-level qualification. In science the situation was more positive, especially in Biology and Chemistry where only 4% of teachers of those subjects had no related post A-level qualifications. In Physics, 10% of teachers had no related post A-level qualification in the subject.

The shortage of specialist teachers for Mathematics and the inequity between qualifications of teachers teaching science was similar to the results of the NFER study looking at the deployment of mathematics and science teachers (DMS) carried out in 2005 (Moor H et al, 2006). The DMS study found that 24% of teachers teaching Mathematics were not specialists<sup>6</sup> in the subject and for science 8% were not specialists.

This compares to 25% of Mathematics teachers with no relevant post A-level qualifications in Mathematics in the SSCSS study. In science, the SSCSS analysis showed that 8% of qualification specialisms of science teachers were in non-science subjects. Both studies also showed that schools with lower proportions of pupils eligible for free school meals attracted teachers with higher levels of related post A-level qualifications than other schools, and schools with pupils from 11-18 had higher proportions of post A-level qualified teachers than schools with pupils from 11-16.

In terms of the new Diplomas, the 2007 survey gave a positive indication that many schools had some teachers with post A-level qualifications relevant to aspects of the new lines of learning, that may help to equip schools to deliver some aspects of the Diplomas starting in 2008

## References

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## Additional information

Copies of the full report (DCSF-RR026) priced at £4.95 are available by phoning the DCSF Orderline on 0845 60 222 60

Copies of this Research Brief (DCSF-RB026) are available free of charge by phoning the above number. The full research report and brief can be accessed at [www.dcsf.gov.uk/research/](http://www.dcsf.gov.uk/research/)

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The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Children, Schools and Families.

<sup>6</sup> Specialist was used to describe teachers who held a degree or initial teacher training qualification in a subject related to the subject they taught.