National College for Teaching & Leadership

Newly Qualified Teachers 2015: An investigation of attitudes in terms of route and context

Research brief

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Background

This is a report of a series of multivariate logistic regression analyses conducted on behalf of the Department of Education (DfE), using their 2015 survey of 7,770 newly qualified teachers (NQTs).

The outcomes of interest are the levels of reported NQT satisfaction with their overall training and induction, and their preparedness to use research evidence, teach children with special educational needs (SEN), help improve pupil reading skills, and handle classroom behaviour. The issues addressed are whether the reported levels of satisfaction vary substantively between routes, phases, and types of provision, how much of any such difference is attributable to the inherent characteristics of the students following these routes, and how much is attributable to the routes alone.

The possible predictors or determinants of NQT satisfaction available for the analyses were respondents' background characteristics such as age and sex, their prior qualifications, and subject specialism, as well as information about the route or course they have taken. Also available were summaries of survey responses for each provider in previous years, and OFSTED effectiveness judgements.

For some outcomes it was not possible to construct a healthy logistic regression model – either because of the level of missing data or because the satisfaction outcomes were too skewed towards one response ('very good'). In the case of satisfaction with preparedness to improve pupil reading skills including the teaching of phonics, the major difference was between responding primary phase NQTs, who were more concerned with this, and the secondary phase respondents who were less concerned. This is presumably simply because the primary phase respondents found the question more relevant to their teaching compared to the secondary phase respondents, who found it less relevant.

The sole outcome producing a healthy model was overall satisfaction with teacher training. This was created using all responses, and then using primary and secondary respondents separately.

Results

Using all responses, it was possible to ‘predict’ (or explain) around 17% of the otherwise unexplained variation in NQT responses about overall satisfaction with their course. This rose to around 18% for primary and secondary responses analysed separately. This slight improvement is largely due to the ability to use more predictors that were sector specific, such as OFSTED grades, the number of NQTs per provider in previous years, and aggregated prior survey results.

Therefore, none of these models has a particularly strong ability to predict the responding NQTs’ satisfaction, on the basis of the explanatory variables available. Most of the variation between individual responses remains unexplained – perhaps because key but unknown variables might be missing, and certainly because the level of satisfaction is generally so high. The average levels of satisfaction for responding NQTs of different background characteristics are also high, and largely unstratified by sex, disability, age and ethnicity.

In all three models most of the variation that can be explained is explained by the qualification aim, phase, subject area, and the location of the provider. Responding NQTs dealing with older age groups of pupils tend to be more satisfied, whatever route they follow. In both primary and secondary sectors, respondents on school-centred initial teacher training (SCITTs) are more satisfied with their preparation overall, all other things being equal. For the secondary sector, respondents are more satisfied if their provider had a higher OFSTED grade, and if previous respondents had expressed higher satisfaction. This suggests a durable quality of the courses involved. Otherwise, the non–higher education institution providers and those led by what are traditionally seen as the more prestigious universities produce more satisfied survey responses.

Where the context (who is on the same route as an individual) matters, it is largely in relation to the characteristics of individuals themselves. The minority groups (males, older, flagged as any disability and flagged as any ethnic minority) are slightly more satisfied when there are more of the same in that route. This is more prominent among primary phase respondents.

While these associations between certain training contexts and an increased satisfaction with training are observed in the survey responses, these contexts are not proven to have caused increased satisfaction.

Conclusions

The report summarises the limitations of the dataset (such as the 24% response rate), and of this kind of analysis. The results must be seen as illustrative rather than being definitive, the results are not causal in nature, or generalisable beyond the responses of the survey. The report also suggests possible improvements for future surveys, if their results are going to be used in this way again.

Something like 10% of the unexplained variation in the reported effectiveness can be linked to differences between routes, phases, and types of provision. The differences are largely not explicable on the basis of the prior personal and background characteristics of the students following these routes. However, these differences can be largely explained by the phase, qualification aims, location, type of provider, and subject specialism of each individual. Therefore, considerably less than 10% of the difference in reported effectiveness between routes is attributable to the routes alone. In the two main routes of School-led and Provider-led there is almost as much variability within each route as there is between them.

As noted above, provider type was considered as part of a block of variables which showed the greatest association with reported effectiveness. The ability of provider type to explain variation in effectiveness is not separated from phase, qualification aims and subject specialism of each individual. While respondents on school-centred initial teacher training (SCITTs) are more satisfied with their preparation overall, all other things being equal, for the two main types of provider, SCITT and HEI, there is also almost as much variability within each type as there is between them. The percentage of respondents reporting that their preparation had been ‘very good’ was high (56%) in the Russell Group universities and in the SCITT providers.

Introduction

The DfE conducts an annual survey of newly qualified teachers (NQTs) concerning their satisfaction with training and induction. It reports the results for each question. This new report takes that analysis a step further by looking at all available relevant indicators, linked to selected survey items, and incorporating a multivariate analysis.

The analysis is based on teacher-level data gathered through the annual survey of Newly Qualified Teachers in 2015, and administrative data collected by the National College for Teaching and Leadership (NCTL) about the former trainees and their training. The approach used is logistic regression, with a range of dependent 'outcome' variables such as overall satisfaction with training, and with preparation for handling classroom behaviour. This explores and illustrates the relative importance of a range of personal and training characteristics as possible determinants of NQT perceptions of their teacher training.

The issues addressed include:

- The scale of the differences in the reported effectiveness of initial teacher training between routes, phases, and types of provision;
- To what extent any such differences are predictable on the basis of the prior characteristics of the students following these routes;
- How much of the difference in reported effectiveness between routes is attributable to the routes alone.

This report describes the methods used, the findings for each model, and then summarises what has been learnt about each question, and the possible implications for policy, practice, and future research.

Methods

This section describes the data provided, and the methods used to clean, prepare and analyse it.

Dataset

A key dataset was the Newly Qualified Teachers: Annual Survey 2015[1]. The individuals invited to answer the survey were all NQTs who had completed their initial teacher training (ITT) in 2013/14 in England, and gained qualified teacher status (QTS) between 1st December 2013 and 30th November 2014. Therefore, all respondents have qualified teacher status, even if this is not recorded by the survey. The question about overall satisfaction was answered by 7,770 of the 32,779 who started ITT in that cohort. The overall response rate is therefore 24%.

The survey questions used as 'outcome' variables in the following analyses are - satisfaction with:

- 1a. overall quality of your training
- 3c. preparing you to teach reading, including, phonics and comprehension
- 5c. preparing you to teach pupils with special educational needs in your classes, with appropriate support
- 7a. preparing you to establish and maintain a good standard of behaviour in the classroom
- 8d. preparing you to access educational research in your teaching
- 8e. preparing you to assess the robustness of educational research
- 8f. preparing you to understand and apply the findings from educational research

  and

- 10b. to what extent do you feel that your induction experience so far has been helpful in improving the quality of your training

Linked to the responses at an individual level are respondents' background characteristics such as age and sex, their prior qualifications, and subject specialism, as well as information about the route, type of provider or course they have taken (such as SCITT, HEI or Teach First). The latter includes the phase, whether at undergraduate (UG) or postgraduate (PG) level, the provider, the providers' number of NQTs per year, OFSTED grade, overall NQT survey satisfaction results for prior

[1] The descriptive analysis of the full annual survey of newly qualified teachers on gov.uk.

years, and geographical location. All of these are used as predictors or independent variables in the models that follow.

The NQT survey also provided a response rate in 2015, the number and percentage of NQTs that completed the survey in 2013 and 2014, and the percentage of NQTs who responded with each possible response to Question 1a about overall satisfaction in 2013 and 2014, for each provider and phase. The Overall Effectiveness Judgements of the most recent inspection, by phase for each provider, from summer 2013 and 2014, were available via the OFSTED/NCTL published Inspection Judgements.

The Provider Profile Management Information systems produced the identification of each provider – including name, ID, postcode, region and the number of NQTs by phase and route in 2015. It also produced, for each NQT respondent, their age, sex, disability status, and ethnicity, prior qualifications (separately for UG and PG), the start and end dates of their ITE course, and the details of the course including whether UG or PG, phase, route, qualification sought, and subject specialism.

Data preparation

The dataset provided by the DfE included 113 cases with Provider Profile Management Information but no survey results. These were deleted before analysis, leaving 7,770 cases.

Logistic regression works well when the cases in the ‘outcome’ variable are well spread out with a substantial number in each cell for comparison. In a binary variable, a near 50:50 spilt is preferable. With three cells 33:33:33 is to be preferred, and so on. Clearly skewed outcomes, on the other hand, are hard to build a robust model around. Where possible, and necessary, the outcome variables were collapsed to create more even cell sizes. This is described further for each model (below).

One possibility explored initially was data reduction, using all of the survey variables in a principal component analysis, in order to see if there was a smaller number of underlying measures of satisfaction with training. This did not produce a useful result, such as a few robust factors explaining a high proportion of the variation in the survey responses, perhaps because each item other than the overall one has substantial missing data. This approach was taken no further.

Similarly, logistic regression works best when the predictor variables are real numbers, or where categorical variables have relatively few categories and all

categories have substantial numbers in them. To achieve this some categories were collapsed, as follows.

The provider name/ID had too many classes, with such variable cell sizes, that it cannot be used as a predictor. The HEIs were collapsed into five groups based loosely on their self-declared groupings, some of which no longer exist – Russell Group, 1994, Million+, University Alliance, and Guild HE. Those universities no longer in or never in such a group were allocated to one judged on age and similarity of mission. Reading, Keele, Hull, and Brunel were put in the 1994 group, Canterbury, Edgehill, Leeds Beckett, Liverpool Hope, Newman, St Mary's College, Chester, Cumbria and Bishop Grosseteste in GuildHE, OU and Buckingham in Million+, and Brighton in the Alliance group.

Only 12 cases reported Yorkshire as their provider region. These were added to the category Yorkshire and Humber.

For prior degree class, the categories undivided, unclassified, pass, ordinary and general were recoded as unclassified degrees. Missing values and not applicable were recoded as not known. Merit was recoded as lower second class, and a distinction as upper second.

The phase variable had only 2 cases relevant to teaching children aged 9-14 (code 79). This was collapsed with the age range 7-14 (code 78).

In route, School Direct self-funded (L) was treated as School Direct (salaried). In the publication subject variable, business studies, economics and social science were collapsed into one (as code 15).

In addition to being used as they were, the routes, undergraduate/postgraduate, and provider variables were aggregated into the following typology of nine over-arching categories:

- Higher Educational Institution, Provider-led training, Undergraduate
- Higher Educational Institution, Provider-led training, Postgraduate
- Higher Educational Institution, School Direct (fee or self-funded), Postgraduate
- Higher Educational Institution, School Direct (salaried), Postgraduate
- School Centred Initial Teacher Training provider, Provider-led training, Postgraduate
- School Centred Initial Teacher Training provider, School Direct (fee or self-funded), Postgraduate

- School Centred Initial Teacher Training provider, School Direct (salaried), Postgraduate
- Teach First
- Employment Based Initial Teacher Training (EBITT) provider, Provider-led training, Postgraduate (legacy/deferred trainees).

Any multivariate analysis that drops cases with any missing data will quickly end up with too few cases to process. Therefore, a decision has to be made whether the cases with missing values can be included in some way that does justice to the data. The following compromises were made.

For the variable concerning known disability, the category 15 (not known) and 21 (missing) and any with no value at all, are recorded as not known. In addition to being used in this way, the disability variable was converted to a flag of known or not known. This reduction is justified on the basis that all known disabled groups (apart from 20 cases with multiple disabilities) have lower than average ratings for satisfaction.

For the variable known ethnicity, categories 21 (missing), 86 (not known) and 57 (information refused) were reclassified as not known. 116 cases listed as White British and 5 as White Scottish were reclassified as White. 7 cases listed as Arab were reclassified as Other. As with disability, the ethnicity variable was converted to a flag of known to be ethnic minority or not.

There are 12 cases missing a value for age. These missing values were replaced with the mean age (28) of all other NQTs, so as to retain these cases without disturbing the analysis in terms of age.

For OFSTED grades in 2013 and 2014 any missing values were recoded as a new missing value of 4[2] (compared to grades 1, 2, and 3). This is a different approach to a real number like age (above) because these OFSTED grades are classifications, not real numbers. A modal score (as opposed to a mean average) would disturb the subsequent analysis.

For qualification on entry, missing values or not known were recoded as a 5th level (0).

For general qualification aim and qualification obtained there are some missing cases but none missing both. A new variable was created (qualification taken) based

[2] As there were no inadequate initial teacher training providers within the dataset, the 'missing value', four, was not equated with an inadequate judgement within the analysis.

on the general qualification aim, but substituting the qualification obtained for any missing value. One case recorded ‘other qualification at level H’. To collapse this cell, it was recoded as an unspecified degree. Following early analysis, 3 cases of no qualification were recoded as QTS assessment only, the two groups of first degree with honours were collapsed, and credits at level I (7 cases) were merged with other taught work or credit at level M.

There were 29 missing values in the primary phase response rate variable, and 85 in the secondary phase. These were recoded as response rate of 0 (only these 114 cases are 0).

Nine providers had some missing student prior satisfaction scores – a total of 56 cases. These providers were Bromley Schools Collegiate, Buckingham Partnership, Hibernia College UK Limited, North West SHARES SCITT, The Kemnal Academies Trust (TKAT), The Learning Institute South West, University of Nottingham (G), and University of Nottingham GTP (EBITT). These missing scores were all replaced with the overall average satisfaction scores.

Four variables were selected to represent the type of course taken by each NQT. These were course type, qualification aim, route, and provider category (reduced as above). For each of these the average age of students, and the percentage of males, and students with known disability and minority ethnicity were computed. These were then used to create 16 new variables such as average age in course type, and percentage of males in each provider category. These were used as potential explanatory variables both on their own (to help assess whether the nature of the intake matters), and in interaction with the relevant characteristic of each individual (to help assess whether the proportion of males matters for males, for example). It should be noted that it was not possible to aggregate the characteristics of NQTs for each specific provider because the response rates and the number of cases per provider were so variable.

Creating the model(s)

The models described in the next section are based on logistic regression. The more usual multiple linear regression has two main drawbacks. It does not work with categorical dependent variables, such as the level of satisfaction with training, nor where the dependent and predictor variables are not linearly related (Achen 1982). And, where they can be compared, logistic regression regularly explains more of the variation in the dependent variable than linear regression does (King 2002). Logistic regression uses predictor variables (of any kind) to compute a score on an underlying latent variable (the predicted value of the dependent variable). If this

score is above a specified critical value then the dependent variable is set to one category, else it is set to another. In other words, the procedure is used to 'predict' which of two or more categories each individual case will manifest, and in doing so creates a model based on the predictor variables (Gilbert 1993, Lehtonen and Pahkinen 1995).

Models were created using all available cases, and also separately for primary and secondary newly qualified teachers.

In creating a model to ‘predict’ or explain the variation in an outcome such as overall satisfaction, the possible predictors were entered in batches, with forward stepwise selection of only those variables making any noticeable difference to the model in each batch. The first batch was the student background characteristics, the second their subjects and qualifications, the third consisted of five route variables, and the fourth included the aggregated context variables and the total number of NQTs of each type in the same route as the student. The final step for the overall model included the interaction terms (as above). For the models involving only primary or only secondary phase NQTs, the models also included the relevant prior satisfaction levels, response rates and OFSTED grading. These variables could not be used for the overall model because they are sector specific and so contain numerous missing values for the other sector. The variables entered at each step are summarised in Table 1(and the full SPSS syntax is available for each model).

Table 1: Variables entered at each step of logistic regression analysis

Step	Variables included
Block 1 - background	Age, sex, Disability flag, Disability, Disability flag
Block 2 – subject/qualification	Institution type, Provider region, Subject specialism, Phase, Qualification taken
Block 3 - route	Course type, qualification aim, Route, Provider category, recoded Routes
Block 4a - context	Age, sex, disability and ethnicity levels IN course type, qualification aim, provider category and route. All Total eligible NQT variables.
Block 4b – context for primary and secondary phase models only	Response rate, OFSTED grade, overall survey results from prior years 2012-2014.
Block 5 – interaction terms	Individual age, sex, disability and ethnicity WITH age, sex, disability and ethnicity levels IN course type, qualification aim, provider category and route.

Each new batch of explanatory variables might increase the percentage explained correctly, over and above that of the baseline and all of the previous batches combined. This will provide an estimate of the differences in reported satisfaction between routes, having taken into account the differences between the people following each route. For comparison a further version of the overall model was created with all variables entered in one block, and selected for inclusion in terms of 'effect' size.

This modelling is, and cannot be, a definitive test of anything. It does not assess a causal link (Gorard 2013). However, the kind of multivariate associations that the model can reveal will suggest where the possible causes of revealed differences lie. The contribution of each batch and each variable can be neatly summarised as a figure – how much of the variation in outcome is attributable to each variable or bundle of variables. This is the percentage of explained variation over and above the base figure, also known as the 'adjusted count pseudo-R^2'. [3]

Even, in the most complex models presented here there are many fewer than 100 possible variables (and most of these are dropped as not helping to explain the outcomes). The number of cases is therefore two orders of magnitude greater than the number of variables, which is a healthy ratio. In order to provide the most

[3] see http://www.ats.ucla.edu/stat/mult_pkg/faq/general/Psuedo_RSquareds.htm

economical explanatory model, variables that make no discernible difference to the pseudo-R^2, or whose coefficients are indistinguishable from 1, are ignored.

The cases are an incomplete census, with only a 24% response rate, and no random selection (and therefore no probabilistic uncertainty). Issues such as standard errors and statistical significance are not relevant (and could be very misleading). Throughout, the analysis is based on ‘effect’ sizes including the percentage of cases whose response is predicted ‘correctly’ by the model, and the odd ratios or coefficients for each independent variable. A few predictor variables are real numbers (such as the respondents’ age); the coefficients for these are multipliers. So, for example, a coefficient of 1.1 for age in years would mean that an individual would be 10% more likely to have a specified outcome for every year of age. Most predictor variables are categorical (such as whether a course was postgraduate or undergraduate). These have a coefficient for each category, with the final category having an arbitrary coefficient of one, and the value is an odds ratio for each category relative to the last. So, a coefficient of 1.1 for the phase of the course could mean that an individual following a postgraduate course would be 10% more likely to have a specified outcome than one following an undergraduate course.

All findings and any conclusions drawn are based on the achieved sample (and the limitations of this are discussed further in the concluding section). While large, the sample does not permit generalised claims about initial teaching preparation more widely.

Where some cell sizes are still small, this can sometimes create unfeasibly large or small coefficients for categorical variables, however, this has very little impact on the overall model, because of the few cases involved. The percentage of cases whose responses is predicted ‘correctly’ by the model at each step is the best guide to the substantive importance of each predictor.

Summary of models attempted but not pursued

As expected, some of the models revealed nothing of any interest because some of the outcome cells are too small, or differ too much from each other in scale. This includes all attempts to create an ordinal multivariate scale.

Only 1.4% of cases reported ‘poor’ overall satisfaction with their ITT. This is good news from respondents, but it means that any model attempting to distinguish them from others is hamstrung from the outset. The base figure for the model with no predictor variables is already 98.6% accurate. Adding predictor variables makes no difference to that base figure. If ‘poor’ and ‘satisfactory’ responses are collapsed into one cell, there are still only 10.8% of cases with less than ‘good’ responses. And adding predictor variables does not improve the model much from the 89.2% baseline figure.

In other models, the outcome figures were more evenly spread but the models still did not improve much on the baseline figures. For the induction questions, those responding ‘not helpful’ (284 cases) were merged with those responding ‘somewhat helpful’, again to try and balance the cell sizes. Comparing these against ‘somewhat helpful’ responses led to no improvement from the baseline. Comparing them to ‘very helpful’ responses led to only a small increase from the baseline.

The model using preparation for handling pupil behaviour as an outcome was even weaker. Comparing ‘very good’ responses with all others, the base model had 68.8% of cases classified correctly, and with all predictor variables included the final model had only 69%. The model for handling special needs in the classroom similarly went from 57.1% to only 60.6%.

The three separate questions on preparedness for reading and using research went from 65.1% to 65.7%, 57.7% to 59.5% and from 58.1% to 60.3%. The responses to these three questions were also collapsed into a summary variable - to eliminate their missing values, and provide an overall picture of research readiness, creating a model comparing individuals with only very good and good responses (with up to two values missing) with all others. This model improved the baseline from 54.4% to only 58.7%

All of these purported small increases can easily come from the way in which the models are fitted *post* hoc. Almost any variation in predictors can lead to such small increases in the outcome predictability, even where the predictors are meaningless (Gorard 2006). What this suggests is that these outcomes – satisfaction with induction, and preparation for using research, and handling behaviour and SEN - are not at all stratified by the kinds of courses and routes taken or in terms of the

individuals who pursue them. There will, of course, be variations within routes, and there may be stratification in terms of variables not available for this analysis. These results are discussed further in the conclusion.

This left four models able to explain the outcomes further with the kinds of variables available, and these are the ones explained in more detail below.

Comparing ‘very good’ overall with all other responses, both phases

The first of the full models used the collapsed version of the question relating to overall satisfaction, for all 7,770 cases (i.e. including both primary and secondary phase NQTs). Responses of ‘poor’, ‘satisfactory’ and ‘good’ (52.6% of cases) were contrasted with ‘very good’ (47.4%). Predictor variables were added in five steps or blocks (see above). A ‘prediction’ for any individual would have a 52.6% chance of being correct if it just assumed that all individuals were in the first category (less than ‘very good’). This is the base figure in Table 2. Adding background characteristics adds little to this base figure, and the context in terms of who else is studying on that route, and the interaction terms similarly make little difference. But there is a noticeable increase in prediction accuracy when the variables concerning the provider, subject, and qualifications are added. Together the latter variables explain 11.0% of the variation that was previously unexplained. This is no longer the kind of increase that comes solely from *post hoc* fitting of variables. The differences are still small, once other things have been taken into account, but there are some patterned differences in overall satisfaction levels.

Table 2: Percentage of variation explained in each step of a binary regression model comparing ‘very good’ responses to overall satisfaction with all others, both phases

Step	Percentage explained	Percentage improvement on base
Base – no variables	52.6	
Block 1 - background	53.7	2.3
Block 2 – subject/qualification	58.9	13.3
Block 3 - route	60.1	15.8
Block 4 - context	60.3	16.2
Block 5 – interaction terms	60.5	16.7

N=7,770

Note: the final column in all such tables, also known as the adjusted count pseudo-R^2 is calculated as the difference between the Block percentage and the base percentage divided by 100 minus the base percentage. For example, (53.7-

52.6)/(100-52.6) is approximately 0.023 or 2.3% of the previously unexplained variation.

Table 3 provides a summary of the variables retained in the most economical model (using forward stepwise selection of variables). These show that older respondents tend to be somewhat less satisfied than average. Since this result comes before the route is considered, it is not clear whether older respondents are on different routes which lead to lower satisfaction or whether this is a direct function of age (perhaps they become more critical). The results will be sensitive to the order in which the variables are entered (as discussed further below). The ordinal relationship between satisfaction and age is illustrated in Table A1 (page 38) in the Appendices.

Table 3 shows that males respondents are slightly more likely to rate their preparation as ‘very good’ (confirmed in Table A2 (page 38)). Table 3 also shows that respondents with a flag for any disability are slightly less satisfied than others (confirmed in Table A3 (page 38)). The final row shows that ethnic minority respondents are slightly more satisfied if there are other ethnic minority respondents on the same kind of course as them.

Table 3: Standardised coefficients in binary regression model comparing 'very good' responses to overall satisfaction with all others, both phases

Variable	Coefficient
Age	***0.994***
Sex (male)	**1.10**
No disability flag	**1.20**
Institution type	
Employment-based initial teacher training (EBITT)	0.84
HEI	1.23
Non-HESA HEI	0.44
SCITT	1.58
Teach First	1.00
Provider region	
East Midlands	1.47
East of England	0.96
Eastern	1.38
London	1.42
Non-regional providers	1.08
North East	1.51
North West	1.29
South East	1.60
South West	1.35
West Midlands	1.55
Yorkshire and the Humber	1.00
Phase code	
3-7	0.56
3-9	0.68
3-11	0.64
5-9	0.74
5-11	0.67
7-11	0.75
7/9-14	0.90
11-16	0.86
11-19	0.99
14-19	1.00
Qualification taken	
QTS assessment only/no qualification	1.18
First degree honours	0
Professional GCE (Professional Graduate Certificate in Education)	1.22

Variable	Coefficient
QTS registration	1.59
Post-graduate certificate in education (PGCE)/Professional GDE (Professional Graduate Diploma in Education)	0.97
Other level M (Masters)	1.00
Provider category	
Russell group or similar	0.78
1994 group or similar	0.58
Million+ group or similar	0.42
Alliance group or similar	0.49
Guild HE group or similar	0.50
Other providers (non-HEIs)	1.00
Recoded routes	
HEI core UG (Provider-led)	0
HEI core PG (Provider-led)	1.05
HEI School Direct fee	0.87
HEI School Direct salary	1.00
SCITT provider led	0.95
SCITT School Direct fee	0.68
SCITT School Direct salary	1.00
Teach First	1.00
EBITT provider led	1.00
Ethnic minority by percentage in course type	***1.01***

Note: Age and the percentage of males in any qualification aim are numeric variables, and the coefficients are therefore multipliers

Once these background factors are taken into account, the institution type, region, phase code and qualification make a substantial difference together. The numbers in some institution types are small and this may distort the coefficients by making them appear unreasonably inflated or deflated. Also, with some very small numbers (such as for EBITT) it may be less likely that the respondents represent the entire cohort. Nevertheless, the overall satisfaction from survey respondents pursuing SCITTs is higher, and those in non-HESA HEIs lower, all other things being equal. Those based in the North East, West Midlands and South East are among the most satisfied.

There is an interesting trend in the results for the phase code (see also Table A6 (page 40)). In general, the responding NQTs express more satisfaction the older the pupils they have prepared to teach. The differences here are considerable. NQTs in non-HEI providers and those in the more traditionally prestigious universities are

more satisfied (Tables A8 (page 41)). As with the phase of pupils, this difference is considerable. Respondents also tend to be slightly more satisfied the higher the level of qualification they are taking or have taken (Table A7 (page 40)), and similarly postgraduates are slightly more satisfied than undergraduates (Table A9 (page 41)). However, neither of these patterns is as strong or as simple.

In order to assess the robustness of the model in face of changing the order of entering the variables, the model was also run with all variables entered simultaneously, using either forward or backward stepwise entry. The amount of variation explained remained constant, of course. But some variables started acting as proxies for one another. The difference was that none of the respondent background variables were retained in the final model. Instead, they were replaced by the subject specialism (itself stratified by student background), and by the interaction context variables. Specifically, in addition to ethnic minority students being more satisfied in provider categories with more ethnic minorities, disabled students were more satisfied in provider categories with more disabled students, and males were more satisfied on course types with more males. So, in reality, perhaps context matters slightly more and individual background slightly less than is portrayed in Table 3. This does not alter the substantive findings, since the role of background is small in all of the models presented here.

Comparing ‘very good’ with all other responses, primary phase

If the cases are separated to look at only primary NQTs, the model changes a little, partly because it is now possible to add the variables relating to OFSTED grading, previous survey response rates, and levels of satisfaction for each provider from prior years of the survey (involving different NQTs). This leads to slightly more variation being explained. However, even the small amount of stratification by respondent background in the overall model disappears. Even before anything else is taken into consideration, primary sector respondents do not differ much by background in their satisfaction (Table 4). Instead, the fourth step of ‘context’ becomes more important.

Table 4: Percentage of variation explained in each step of a binary regression model comparing ‘very good’ responses to overall satisfaction with all others, primary only

Step	Percentage explained	Percentage improvement on base
Base – no variables	57.4	-
Block 1 - background	57.4	0
Block 2 – subject/qualification	60.7	7.7
Block 3 - route	62.0	10.8
Block 4 - context	64.7	17.1
Block 5 – interaction terms	65.0	17.8

N=4,234

Unlike the overall model, ethnicity is slightly patterned here with White students reporting higher satisfaction, but there is no clear difference by age or disability (Table 5, see also B1 (page 42)). Once the route variables are included, all other things being equal, survey respondents on SCITTs are more satisfied than those on EBITTs or in non-HESA HEIs (also Table B2 (page 42)), while respondents in non-regional providers are more satisfied than those in any region (Table B3 (page 43)). The subject specialism appears in Table 5 but not in Table 4, suggesting that those respondents specialising in PE for the primary sector are less satisfied than any

other subject area. As with the overall model, respondents report being more satisfied the higher their qualification tends to be.

Table 5: Standardised coefficients in binary regression model comparing 'very good' responses to overall satisfaction with all others, primary phase

Variable	Coefficient
No ethnic minority flagged	**1.23**
Institution type	
EBITT	0
HEI	1.26
Non-HESA HEI	0.42
SCITT	1.40
Teach First	1.00
Provider region	
East Midlands	0.67
East of England	1.02
Eastern	0.82
London	0.91
Non-regional providers	1.22
North East	0.71
North West	0.82
South East	0.68
South West	0.73
West Midlands	0.83
Yorkshire and the Humber	1.00
Subject specialism	
STEM	4.32
Languages	5.03
English	8.20
Social sciences and humanities	5.24
Arts	7.52
No specialism	4.59
PE	1.00
Qualification obtained	
QTS assessment only	2.36
First degree honours	1.13
Professional GCE (Professional Graduate Certificate in Education)	2.10
QTS registration	3.13
PGCE/Professional GDE (Professional Graduate Diploma in Education)	1.49

Variable	Coefficient
Other level M (Masters)	1.00
Route	
Core (Provider-led)	1.73
EBITT	0.00
School Direct (fee)	1.65
School Direct (salaried)	1.00
Teach First	1.00
Provider category	
Russell group or similar	0.57
1994 group or similar	0.40
Million+ group or similar	0.27
Alliance group or similar	0.29
Guild HE group or similar	0.31
Other providers (non-HEIs)	1.00
Percentage of 2013 NQTs rating good or better	***1.01***

Note: The percentage of NQTs rating good or better is a numeric variable, and the coefficient is therefore a multiplier

Comparing ‘very good’ with all other responses, secondary phase

As with the primary sector, it is possible to explain slightly more variation in the responses of secondary respondents than in the overall model by introducing new variables about OFSTED inspections and survey responses from prior cohorts at the same providers. Here, however, there is some stratification by respondent background (Table 6). Again most variation is explained by the subject and qualification step.

Table 6: Percentage of variation explained in each step of a binary regression model comparing ‘very good’ responses to overall satisfaction with all others, secondary only

Step	Percentage explained	Percentage improvement on base
Base – no variables	53.1	-
Block 1 - background	55.0	4.1
Block 2 – subject/qualification	58.8	12.2
Block 3 - route	60.0	14.7
Block 4 - context	61.3	17.5
Block 5 – interaction terms	61.5	17.9

N=3,536

As with the overall model, younger survey respondents and males tend to be slightly more satisfied (Table 7, and see also Tables C1 and C2 (page 46)), those in SCITTs are more satisfied than those in EBITTs, and in distinction to the primary sector model, respondents pursuing a PE specialism were more satisfied (Table C5 (page 48)). The biggest variation occurs with the qualification taken. Survey respondents taking first degrees with honours are considerably more satisfied. The satisfaction rates are consistent with those of previous year cohorts, and with OFSTED grading. Both of these suggest that courses have some intrinsic and stable properties that NQTs appreciate.

Table 7: Standardised coefficients in binary regression model comparing 'very good' responses to overall satisfaction with all others, secondary phase

Variable	Coefficient
Age	***0.99***
Sex (male)	**1.23**
Institution type	
EBITT	0
HEI	0.85
SCITT	1.51
Teach First	1.00
Provider region	
East Midlands	1.43
East of England	1.02
Eastern	1.66
London	1.90
Non-regional providers	1.63
North East	1.77
North West	1.32
South East	1.89
South West	1.27
West Midlands	1.99
Yorkshire and the Humber	1.00
Subject specialism	
Science, technology, engineering & mathematics (STEM)	0.62
Languages	0.63
English	0.79
Social sciences and humanities	0.74
Arts	0.80
Physical education (PE)	1.00
Qualification taken	
QTS assessment only	1.47
First degree honours	4.02
Professional GCE (Professional Graduate Certificate in Education)	1.44
QTS registration	1.22
PGCE/Professional GDE (Professional Graduate Diploma in Education)	1.87
Other level M (Masters)	1.00
Qualification aim (postgraduate)	**1.72**

Variable	Coefficient
Route	
Core (Provider-led)	1.29
EBITT	Very large number
School Direct (fee)	0.93
School Direct (salaried)	1.00
Teach First	1.00
OFSTED ITE grading	1.12
Percentage of 2012 NQTs rating very good	***2.86***
Percentage of 2013 NQTs rating very good	***3.13***
Percentage of 2014 NQTs rating satisfactory	***0.29***
Disability by percentage of disabled in provider category	**1.03**

Note: Age and the percentage of NQTs rating very good or satisfactory are numeric variables, and the coefficients are therefore multipliers

In all models, where the aggregated context variables are retained it is the interaction version. Here, for example, neither an individual's disabled status nor the proportion of disabled NQTs on their route is retained in the model. But the interaction is. So, put simply, disabled respondents tend to be more satisfied the more disabled students there are in the same provider category as them.

Comparing very or good versus less than good preparation for reading, both phases

The model based on the single survey item about satisfaction with preparedness for teaching reading is summarised in Table 8 and Table 9. It explains more variation than the first three models about overall satisfaction, and almost all of this increase comes when the variables concerning subject and qualification taken are added (Table 8).

Table 8: Percentage of variation explained in each step of a binary regression model comparing 'very good' responses to preparation for reading with all others, both phases

Step	Percentage explained	Percentage improvement on base
Base – no variables	50.8	-
Block 1 - background	53.1	4.9
Block 2 – subject/qualification	63.7	27.5
Block 3 - route	63.8	27.7
Block 4 - context	63.9	27.9
Block 5 – interaction terms	64.2	28.6

N=7,769

Male survey respondents and those with any kind of reported disability are slightly less satisfied in their preparation for reading (Table 9). The former could be simply because more males train for the secondary sector, and so teaching reading is less generally relevant. The same could apply to the lower reported readiness via Teach First compared to SCITTs and EBITTs, and the much higher preparedness of those with no subject specialism (all of whom will be in the primary sector), or not linked to a HEI. This is borne out by the relative satisfaction in each phase code (see Table D6 in the Appendices). Non-regional providers and those in the West Midlands have the highest satisfaction amongst survey respondents with preparation for reading (see also Table D4 (page 51)).

Table 9: Standardised coefficients in binary regression model comparing 'very good' responses with all others, for reading, both phases

Variable	Coefficient
Sex (female)	**1.06**
No disability flagged	**1.25**
Institution type	
EBITT	1.64
HEI	1.31
Non-HESA HEI	1.33
SCITT	1.05
Teach First	1.00
Provider region	
East Midlands	1.08
East of England	1.21
Eastern	1.37
London	1.10
Non-regional providers	1.54
North East	1.23
North West	1.24
South East	1.37
South West	1.36
West Midlands	1.54
Yorkshire and the Humber	1.00
Subject specialism	
STEM	0.84
Languages	1.65
English	1.62
Social sciences and humanities	1.02
Arts	1.11
No specialism	1.29
PE	1.00
Phase code	
3-7	3.47
3-9	3.27
3-11	2.32
5-9	2.51
5-11	2.38
7-11	2.12
7/9-14	1.58
11-16	0.90

Variable	Coefficient
11-19	0.96
14-19	1.00
Qualification taken	
QTS assessment only/no qualification	0.40
First degree honours	0.75
Professional GCE (Professional Graduate Certificate in Education)	0.49
QTS registration	0.47
PGCE/Professional GDE (Professional Graduate Diploma in Education)	0.56
Other level M (Masters)	1.00
Provider category	
Russell group or similar	0.58
1994 group or similar	0.56
Million+ group or similar	0.47
Alliance group or similar	0.50
Guild HE group or similar	0.43
Other providers (non-HEIs)	1.00

These results are likely to be more about the phase in which the NQT is preparing to teach than their characteristics or the route they follow. This was confirmed by running the model separately for primary phase respondents alone. Like those described in Section 3, the model did not explain a useful amount of variation in results, with all variables included the correctness of the model went from baseline of 64.1% to 64.6%.

Conclusion

Limitations of the analysis/data

This analysis is based on a rich dataset combining attitude, background, context and historical elements. However, it has a number of deficiencies for the purposes it was used for here. Most notably, it only includes NQTs, and it has a response rate of only 24%.

The lack of data on those who fail or otherwise drop out from their courses (and perhaps even those who qualify but do not end up in a teaching role) means that the results could be quite misleading. For example, if two routes had equivalent satisfaction scores for their eventual NQTs, but one route had complete data and the other had lost 50% of its students at an earlier stage, then it would be unfair to rate their satisfaction as being equal (Gorard 2013). Yet this is what would have to happen in the analysis presented here. In future, it would be useful to gather as much information as possible about the minority of students that might drop out from each route (at the very least the number of such cases). It might also be interesting to have some knowledge of the nature of the school in they took their first post, and indeed whether they did take up a teaching post.

The response rate clearly affects what is often termed the external validity of the study. We cannot be sure how generalisable the results will be to the entire cohort. But more importantly, it is likely to introduce bias and so influence the security of the findings themselves (Gorard 2015). Wherever it has been possible to assess, it has been demonstrated that those individuals not responding to surveys are not a random sub-set of those eligible, and nor are the respondents (Behaghel et al. 2009). If, for example, those who were disgruntled by their experiences were less likely to respond then this would make the results appear more positive (and vice versa). In future, more effort should be put into getting as near to full response as possible. This might involve consideration of the timing of the survey, and the incentives for completing it, but a simple suggestion would be to reduce the length of the instrument. However interested the developers are in each and every item it is almost certain that many respondents will find it repetitive and eventually tedious.

The prior qualifications listed in the dataset are different for undergraduate and postgraduate trainees. This makes them difficult to use as a potential background variable. It would be useful to have a common measure of prior attainment, perhaps in terms of Key Stage 5 scores, as well those already available.

The biggest limitation for any logistic regression model with this dataset is the number of variables with sparse cells. Some assumptions and compromises have been made in the models portrayed but it would be useful to have a more official meta-coding for some items. For example, having one case out of nearly 8,000 coded as 'Other qualification at level H' is inconvenient. Each sparse cell, and these are likely to be the same every year, should be given an alternate official coding (in addition to the more detailed coding).

The limitation with the skewed satisfaction responses is slightly harder to address. They are very skewed towards the positive, meaning that the poor and satisfactory responses are hard to include as separate values in a logistic regression. One possibility would be to try and shift the scale itself towards the positive (such as having the categories satisfactory or worse, good or very good, and perfect or near perfect) but this would require considerable work and pre-testing to ensure that the skewed responses do not persist anyway.

Regression models of the kind presented above have three main limitations, mostly arising from misconceptions about their meaning. The coefficients and the inclusion and exclusion of entire variables are sensitive to quite minor adjustments in the process of modelling. They are sensitive to the coding used, the existence of relatively sparse cells, the order and method used to enter them into the models, and to the existence of other correlated variables. This means that they should be interpreted as one, hopefully useful, way of envisaging the multivariate associations between the outcome and the predictor variables. However, some commentators and readers begin to imagine the coefficients as though they represented some kind of existential constants. It is better to ignore the precise value of each coefficient and consider only their relative importance to the model. Worse, some commentators treat them as proven causal agents whereas they are clearly only a way of representing correlations. A lack of association can indeed be read as evidence of a clear lack of causation; an association is the start of identifying a causal model. This report does use the regression coefficients to identify specific contexts in which survey respondents were more likely to rate their training as very good, but the results do not prove that the given context is the cause of the association.

The satisfaction data is self-reported and based on individuals' perceptions. However, these individuals have not experienced other routes or providers, and so no direct comparison is possible at the individual level.

Despite these limitations, the percentage of variation explained and the kind of variables included and their relative importance to the models has been shown to be robust across different versions. The results are worth taking seriously.

Summary of findings

The overall findings are summarised under the broad headings of the three issues raised in the introduction.

- To what extent any such differences are predictable on the basis of the prior characteristics of the students following these routes;

The clearest findings are that, in general, there is a high level of reported overall satisfaction with ITT, and that this is true across all routes. Very few respondents claimed that their preparation had been poor or even only satisfactory. There was less satisfaction with specific features such as preparation for handling special needs, behaviour and reading. But this may be due to differential relevance. For example, teaching reading via phonics is more common in primary settings than in secondary schools. So, secondary NQTs may report not feeling well prepared to teach via phonics but this may not influence their overall satisfaction level as it is seen as not so relevant to them. The average levels of satisfaction for respondents of different background characteristics are also high, and largely unstratified by sex, disability, age and ethnicity.

- How much of the difference in reported effectiveness between routes is attributable to the routes alone.

There is no evidence that the route taken matters for perceived preparation for using research, usefulness of induction, or readiness to manage behaviour or teach pupils with special needs in the classroom.

There is no apparent link between NQT satisfaction with their course and the availability of bursaries in specific, deemed shortage, subjects such as STEM.

In fact, the majority of unexplained variation in reported satisfaction outcomes remains unexplained in all models. Adding all available variables, including those aggregated and examined as interactions with others, can explain only around 20% of the unexplained variation even in the four strongest models. Again this means that satisfaction with ITE and induction is, to a large extent, not patterned in terms of the measures and variables available for this analysis. It is important to recall both the limitations (above) and the overall low level of patterning when moving on to consider the patterns that are robust.

- The scale of the differences in the reported effectiveness of initial teacher training between routes, phases, and types of provision

Where the context (who one shares a route with) matters it is largely in relation to the characteristics of individuals themselves. The minority groups (males, older, flagged as any disability and flagged as any ethnic minority) are slightly more satisfied when there are more of the same in that route.

NQT survey respondents dealing with older age groups of pupils tend to be more satisfied, whatever route they follow. Otherwise, the non–HEI providers and those led by what are traditionally seen as the more prestigious universities produce more satisfied survey responses. The reported level of preparation for teaching reading is largely a function of the age group taught, and therefore its relevance to that age group.

In both primary and secondary sectors, respondents trained at SCITTs are more satisfied with their preparation overall, all other things being equal. In the primary sectors, respondents specialising in PE are least satisfied, while in secondary routes the reverse is true. It is not clear what this means. Otherwise, for the secondary sector respondents are more satisfied if their provider had a higher OFSTED grade, and if previous NQTs had expressed higher satisfaction. This suggests a durable quality of the courses involved.

Implications

The results in terms of the context variables make only a slight difference to the models, and the data cannot identify exactly who studies with whom. However, it is worth noting that the diversity of students on each route is apparently appreciated, particularly by those respondents with minority characteristics (such as those reporting ethnic minority origins). This could be improved, perhaps as a kind of widening participation approach by those providers currently taking less than their fair share of students with minority characteristics (such as a reported disability).

The EBITTs route is being phased out, there were only 37 respondents from EBITTs included in this sample, and so no further consideration is given to the findings for this route.

Something like 10% of the unexplained variation in the reported effectiveness can be linked to differences between routes, phases, and types of provision. The differences are largely not explicable on the basis of the prior personal and background characteristics of the students following these routes. However, these differences can be largely explained by the phase, qualification aims, location, type of provider, and subject specialism of each individual. Therefore, considerably less than 10% of the difference in reported effectiveness between routes is attributable to the routes

alone. In the two main routes of School-led and Provider-led there is almost as much variability within each route as there is between them.

As noted above, provider type was considered as part of a block of variables which showed the greatest association with reported effectiveness. The ability of provider type to explain variation in effectiveness is not separated from phase, qualification aims and subject specialism of each individual. While respondents on school-centred initial teacher training (SCITTs) are more satisfied with their preparation overall, all other things being equal, for the two main types of provider, SCITT and HEI, there is also almost as much variability within each type as there is between them. The percentage of respondents reporting that their preparation had been ‘very good’ was high (56%) in the Russell Group universities and in the SCITT providers.

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Appendices

Appendix A: Frequency tables for main predictor variables – overall satisfaction

Tables A1 to A9 show that rates for poor and satisfactory rates are generally in line with those for good and for very good. This suggests that collapsing these categories, as was necessary for the logistic regression, is reasonable.

Table A1 – Mean age of respondents giving each response about overall satisfaction, both phases

	Poor	Satisfactory	Good	Very good
Mean age	32.0	29.7	28.0	28.1
Standard deviation	9.6	8.0	7.4	7.2

N=7,770

Table A2 – Percentage of respondents of each sex giving each response about overall satisfaction, both phases

	Poor	Satisfactory	Good	Very good
Female	1.3	9.5	42.9	46.4
Male	1.8	9.2	38.3	50.7

N=7,770

Table A3 – Percentage of respondents with any disability giving each response about overall satisfaction, both phases

	Poor	Satisfactory	Good	Very good
Any disability	2.6	12.8	42.0	42.6
No known disability	1.3	9.1	41.8	47.8

N=7,770

Table A4 – Percentage of respondents in each type of institution giving each response about overall satisfaction, both phases

	Poor	Satisfactory	Good	Very good
EBITT	0	20.0	40.0	40.0
HEI	1.5	9.5	43.8	45.3
Non-HESA HEI	8.3	25.0	50.0	16.7
SCITT	1.1	8.5	34.0	56.5
Teach First	1.9	11.5	42.9	43.6

N=7,770

Table A5 – Percentage of respondents in each provider region giving each response about overall satisfaction, both phases

	Poor	Satisfactory	Good	Very good
East Midlands	1.0	9.3	41.1	48.6
East of England	0.7	14.0	47.6	37.8
Eastern	0.7	8.3	40.2	50.8
London	1.6	9.7	43.3	45.5
Non-regional providers	2.6	11.8	40.8	44.7
North East	1.9	7.6	37.1	53.3
North West	1.8	8.3	45.1	44.9
South East	1.1	10.4	37.8	50.6
South West	1.7	9.2	40.2	48.8
West Midlands	0.9	9.0	40.3	49.8
Yorkshire and the Humber	2.2	10.1	48.8	39.0

N=7,770

Table A6 – Percentage of respondents in each phase code giving each response about overall satisfaction, both phases

	Poor	Satisfactory	Good	Very good
3-7	1.1	11.0	49.7	38.1
3-9	1.7	6.9	50.0	41.4
3-11	1.7	10.0	47.6	40.7
5-9	0	14.6	35.4	50.0
5-11	1.5	9.6	45.2	43.7
7-11	0.5	10.5	44.2	44.7
7/9-14	0	11.1	36.1	52.8
11-16	1.5	9.8	37.9	50.8
11-19	1.4	7.7	35.6	55.3
14-19	0	7.1	28.6	64.3

N=7,770

Table A7 – Percentage of respondents with each qualification taken giving each response about overall satisfaction, both phases

	Poor	Satisfactory	Good	Very good
QTS assessment only	1.8	10.5	33.3	54.4
First degree honours	0.8	7.2	48.0	44.0
Professional GCE	2.2	11.7	42.4	43.7
QTS registration	1.4	10.9	40.2	47.6
PGCE/Professional GDE	1.5	9.1	40.6	48.8
Other level M	0	19.2	42.3	38.5

N=7,770

Table A8 – Percentage of respondents in each provider category giving each response about overall satisfaction, both phases

	Poor	Satisfactory	Good	Very good
Russell group or similar	1.3	6.5	35.9	56.3
1994 group or similar	0.7	9.9	41.7	47.7
Million+ group or similar	1.5	12.5	47.7	38.3
Alliance group or similar	1.7	10.8	45.6	41.9
Guild HE group or similar	1.8	9.2	46.5	42.6
Other providers (non-HEIs)	1.0	8.5	33.7	56.8

N=7,770

Table A9 – Percentage of respondents in each recoded route giving each response about overall satisfaction, both phases

	Poor	Satisfactory	Good	Very good
HEI core UG (Provider-led)	0.8	7.2	48.1	43.8
HEI core PG (Provider-led)	1.5	9.5	42.5	46.5
HEI School Direct fee	2.4	12.2	43.1	42.3
HEI School Direct salary	2.4	12.5	44.6	40.4
SCITT provider led	1.1	7.6	33.0	58.3
SCITT School Direct fee	1.1	9.6	36.5	52.7
SCITT School Direct salary	1.0	9.2	33.6	56.2
Teach First	1.9	11.5	42.9	43.6
EBTT provider led	0	20.0	40.0	40.0

N=7,770

Appendix B: Frequency tables for main predictor variables – overall satisfaction, primary only

Table B1 – Percentage of respondents in each category of ethnicity flag giving each response about overall satisfaction, primary only

	Poor	Satisfactory	Good	Very good
White	1.4	9.7	45.7	43.2
Any ethnic minority	1.3	12.0	50.0	36.6

N=4,234

Table B2 – Percentage of respondents in each institution type giving each response about overall satisfaction, primary only

	Poor	Satisfactory	Good	Very good
EBITT	0	23.1	46.2	30.8
HEI	1.5	10.3	49.2	39.0
Non-HESA HEI	8.3	25.0	50.0	16.7
SCITT	0.9	8.1	32.5	58.5
Teach First	0	5.9	46.1	50.0

N=4,234

Table B3 – Percentage of respondents in each provider region giving each response about overall satisfaction, primary only

	Poor	Satisfactory	Good	Very good
East Midlands	1.6	9.0	45.3	44.1
East of England	0	12.3	47.2	40.6
Eastern	0.5	8.1	45.1	46.3
London	2.0	11.2	49.3	37.6
Non-regional providers	3.2	12.9	29.0	54.8
North East	0	7.5	41.4	51.1
North West	2.1	8.8	47.8	41.4
South East	1.2	10.4	41.1	47.2
South West	1.1	10.6	43.4	44.9
West Midlands	0.9	10.7	47.8	40.6
Yorkshire and the Humber	2.3	9.5	52.5	35.7

N=4,234

Table B4 – Percentage of respondents in each subject specialism giving each response about overall satisfaction, primary only

	Poor	Satisfactory	Good	Very good
STEM	2.5	15.2	44.3	38.0
Languages	0	12.0	48.0	40.0
English	0	8.3	41.7	50.0
Social sciences and humanities	0	3.4	51.7	44.8
Arts	0	9.1	36.4	54.5
No specialism	1.4	9.8	46.1	42.7
PE	13.0	17.4	52.2	17.4

N=4,234

Table B5 – Percentage of respondents with each qualification taken giving each response about overall satisfaction, primary only

	Poor	Satisfactory	Good	Very good
QTS assessment only	2.9	5.9	29.4	61.8
First degree honours	0.7	7.7	49.7	41.9
Professional GCE	2.6	13.0	46.4	38.0
QTS registration	0.6	9.5	41.2	48.7
PGCE/Professional GDE	1.7	10.4	45.7	42.2
Other level M	0	19.4	41.9	38.7

N=4,234

Table B6 – Percentage of respondents in each route giving each response about overall satisfaction, primary only

	Poor	Satisfactory	Good	Very good
Core (Provider-led)	1.3	10.1	47.1	41.6
EBITT	0	25.0	47.1	33.3
School Direct (fee)	2.8	10.0	43.6	43.6
School Direct (salaried)	1.7	8.4	38.1	51.8
Teach First	0	5.7	45.7	48.6

N=4,234

Table B7 – Percentage of respondents in each provider category giving each response about overall satisfaction, primary only

	Poor	Satisfactory	Good	Very good
Russell group or similar	1.1	7.2	41.0	50.7
1994 group or similar	0.8	9.6	47.1	42.5
Million+ group or similar	1.4	13.1	51.5	34.0
Alliance group or similar	1.7	11.3	49.5	37.6
Guild HE group or similar	2.0	9.1	50.5	38.4
Other providers (non-HEIs)	0.8	7.8	32.3	59.1

N=4,234

Appendix C: Frequency tables for main predictor variables – overall satisfaction, secondary only

Table C1 – Mean age of respondents giving each response about overall satisfaction, secondary only

	Poor	Satisfactory	Good	Very good
Mean age	33.7	30.0	28.2	27.9
Standard deviation	10.9	8.1	7.2	6.9

N=3,536

Table C2 – Percentage of respondents of each sex giving each response about overall satisfaction, secondary only

	Poor	Satisfactory	Good	Very good
Female	1.4	8.9	37.8	52.0
Male	1.5	8.6	34.3	55.5

N=3,536

Table C3 – Percentage of respondents in each institution type giving each response about overall satisfaction, secondary only

	Poor	Satisfactory	Good	Very good
EBITT	0	18.5	37.0	44.4
HEI	1.4	8.5	36.7	53.4
SCITT	1.3	8.8	35.5	54.4
Teach First	2.5	13.1	42.6	41.8

N=3,536

Table C4 – Percentage of respondents in each provider region giving each response about overall satisfaction, secondary only

	Poor	Satisfactory	Good	Very good
East Midlands	0.4	9.6	36.2	53.9
East of England	2.7	18.9	48.6	29.7
Eastern	0.9	8.5	34.3	56.2
London	1.0	7.7	35.6	55.6
Non-regional providers	2.2	11.1	48.9	37.8
North East	4.3	7.8	31.9	56.0
North West	1.4	7.6	41.7	49.3
South East	1.12	10.4	34.5	54.0
South West	2.4	7.5	36.2	53.9
West Midlands	0.9	7.3	32.7	59.1
Yorkshire and the Humber	2.0	10.8	43.7	43.4

N=3,536

Table C5 – Percentage of respondents in each subject specialism giving each response about overall satisfaction, secondary only

	Poor	Satisfactory	Good	Very good
STEM	1.6	8.3	39.5	49.6
Languages	2.3	9.5	36.9	51.3
English	1.7	10.9	33.9	53.6
Social sciences and humanities	0.8	6.9	36.8	55.5
Arts	1.1	10.3	32.7	55.9
PE	0.3	4.0	31.5	64.1

N=3,536

Table C6 – Percentage of respondents with each qualification taken giving each response about overall satisfaction, secondary only

	Poor	Satisfactory	Good	Very good
QTS assessment only	0	17.4	39.1	43.5
First degree honours No qualification on exit	1.7	3.3	32.5	62.5
Professional GCE	1.6	10.0	37.5	50.8
QTS registration	2.0	12.1	39.3	46.6
PGCE/Professional GDE	1.3	8.1	36.1	54.5
Other level M	0	18.8	43.8	37.5

N=3,536

Table C7 – Percentage of respondents with each qualification aim taken giving each response about overall satisfaction, secondary only

	Poor	Satisfactory	Good	Very good
Postgraduate	1.4	9.0	36.8	52.8
Undergraduate	1.6	3.3	32.8	62.3

N=3,536

Table C8 – Percentage of respondents in each route giving each response about overall satisfaction, secondary only

	Poor	Satisfactory	Good	Very good
Core (Provider-led)	1.3	6.9	35.2	56.5
EBITT	0	19.2	34.6	46.2
School Direct (fee)	1.5	11.9	39.4	47.2
School Direct (salaried)	1.7	13.1	39.2	46.1
Teach First	2.4	13.0	43.1	41.5

N=3,536

Table C9 – Percentage of respondents in route with each OFSTED grade giving each response about overall satisfaction, secondary only

	Poor	Satisfactory	Good	Very good
Grade 1	1.4	6.0	32.1	60.5
Grade 2	1.4	10.0	39.5	49.1
Grade 3	3.6	21.4	42.9	32.1

N=3,536

Appendix D: Frequency tables for main predictor variables – satisfaction with preparation for reading

Table D1 – Percentage of respondents of each sex giving each response about reading, both phases

	Poor	Satisfactory	Good	Very good
Female	9.1	20.5	29.5	22.7
Male	12.0	26.1	27.9	18.5

N=7,770

Table D2 – Percentage of respondents with any disability giving each response about reading, both phases

	Poor	Satisfactory	Good	Very good
Any disability	13.8	21.8	26.0	20.2
No known disability	9.4	21.9	29.4	21.8

N=7,770

Table D3 – Percentage of respondents in each institution type giving each response about reading, both phases

	Poor	Satisfactory	Good	Very good
EBITT	7.5	25.0	32.5	22.5
HEI	9.8	22.1	29.1	20.8
Non-HESA HEI	0	25.0	41.7	16.7
SCITT	8.5	19.8	29.3	26.6
Teach First	21.8	31.4	25.0	8.3

N=7,770

Table D4 – Percentage of respondents in each provider region giving each response about reading, both phases

	Poor	Satisfactory	Good	Very good
East Midlands	7.9	25.3	26.6	21.2
East of England	7.7	15.4	30.8	25.9
Eastern	9.5	19.0	31.8	24.0
London	10.9	22.6	31.5	15.9
Non-regional providers	13.2	25.0	26.3	25.0
North East	10.5	15.6	28.6	24.4
North West	8.5	23.0	26.4	23.2
South East	11.4	22.3	29.6	21.4
South West	8.7	20.3	28.2	25.9
West Midlands	8.4	22.6	29.7	23.6
Yorkshire and the Humber	11.0	23.7	27.4	19.0

N=7,770

Table D5 – Percentage of respondents in each subject specialism giving each response about reading, both phases

	Poor	Satisfactory	Good	Very good
STEM	20.8	31.5	21.9	9.3
Languages	12.7	24.1	29.3	18.1
English	11.6	22.9	27.9	19.6
Social sciences and humanities	15.9	30.5	24.9	10.7
Arts	16.6	25.8	25.1	13.1
No subject specialism	3.1	15.6	33.0	30.3
PE	15.9	30.2	27.1	10.3

N=7,770

Table D6 – Percentage of respondents in each phase code giving each response about reading, both phases

	Poor	Satisfactory	Good	Very good
3-7	1.5	11.4	32.6	36.8
3-9	0	13.8	32.8	37.9
3-11	3.4	17.1	36.4	25.8
5-9	4.2	12.5	33.3	33.3
5-11	3.5	15.7	32.5	29.9
7-11	3.7	21.1	33.7	23.2
7/9-14	11.1	19.4	27.8	22.2
11-16	17.3	30.0	23.9	11.6
11-19	18.4	29.0	24.2	12.0
14-19	11.9	35.7	38.1	4.8

N=7,770

Table D7 – Percentage of respondents with each qualification taken giving each response about reading, both phases

	Poor	Satisfactory	Good	Very good
QTS assessment only	17.5	24.6	19.3	31.6
First degree honours	3.6	14.3	32.8	29.7
Professional GCE	11.0	20.6	29.0	19.3
QTS registration	8.7	24.2	28.6	22.5
PGCE/Professional GDE	11.4	23.6	28.3	19.5
Other level M	5.1	12.8	35.9	30.8

N=7,770

Table D8 – Percentage of respondents in each provider category giving each response about reading, both phases

	Poor	Satisfactory	Good	Very good
Russell group or similar	14.5	22.8	26.1	19.7
1994 group or similar	11.4	22.7	27.2	20.7
Million+ group or similar	7.9	21.6	32.3	19.1
Alliance group or similar	8.7	21.4	28.6	22.9
Guild HE group or similar	9.0	23.3	29.6	20.1
Other providers (non-HEIs)	8.3	19.6	29.3	27.2

N=7,770

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