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Maximum Impact Evaluation

The impact of Teach First teachers in schools

An evaluation funded by the Maximum Impact Programme for Teach First

Final Report

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Executive summary

What is this report about?
In this report we explore the impact of Teach First teachers in their classrooms and schools. We consider their impact on classroom practice, leadership and pupil achievement.

Why was this study commissioned?
This study was commissioned as part of the Maximum Impact Programme (MIP), funded for Teach First by the Goldman Sachs Foundation. The MIP has focused on development within Teach First's leadership programme. Its aim was to try and further develop the impact of Teach First teachers through understanding their current impact in schools.

How was the study conducted?
Key questions considered in this report are:
- Are Teach First teachers having a positive impact in their classrooms?
- Are Teach First teachers leaders inside and outside of the classroom?
- Are Teach First teachers having an impact on pupil achievement?
- What factors can enhance the impact of Teach First teachers in their schools?

The approach was a mixed methods design, including the following methods:
- Survey questionnaires;
- Face-to-face interviews;
- Analysis of documentary data;
- Analysis of performance data.

What are our findings?
Overall, there is converging evidence that Teach First teachers have a positive impact in schools. While none of the elements of this evaluation in and of themselves can demonstrate conclusively that Teach First teachers have a positive impact, taken together the evidence is compelling:
- Quantitative analysis shows positive pupil outcomes in Teach First schools compared to comparator schools;
- Quantitative analysis shows that having a larger number of Teach First teachers in the school is related to more positive outcomes;
- Classroom observation data show that Teach First teachers are effective classroom practitioners;
- Survey data show that Teach First teachers believe that they can make a difference to pupils, and head teacher surveys support this;
- Survey data indicate that Teach First teachers are leaders in and outside their classrooms;
- Interview data confirm that Teach First teachers are seen as leaders in their schools and as effective practitioners by their second year in the school.

In particular, classroom observation data demonstrated that Teach First teachers consistently rated above the midpoint of the scale for the factors observed, indicating

overall high levels of teacher effectiveness. However, there are clear differences in performance across the different areas. Teach First teachers are particularly strong in creating a positive classroom climate. They also rate highly on classroom management and on instructional skills, with lessons that run smoothly and follow a logical progression. Where Teach First teachers are somewhat weaker is in promoting active learning and metacognitive skills. Teach First teachers also show high levels of self-efficacy, and feel they can make a difference to their students.

The impact of Teach First teachers on leadership is widely recognised by senior staff in the schools visited. Teach First participants are a very visible presence in their schools and are contributing significantly to leadership. They engage in a range of high-profile leadership roles and activities, such as acting as gifted and talented or literacy co-ordinators. Teach First teachers put themselves forward for such roles, as well as organising out-of-school activities, such as trips to businesses and enrichment activities.

There is evidence of a correlation between participation in Teach First and pupil achievement, which appears one to two years following the first year of participation. The relationship appears sooner in the most recent cohorts, possibly as a result of development of the programme. Typically, where significant, Teach First participation explains between 20% and 40% of the between-school variance in pupil performance at GCSE. This is particularly evident for the 2003, 2004 and 2006 cohorts. It has to be pointed out here that this correlational evidence doesn't in itself show a causal link. Other factors, such as changes in school leadership, may explain the relationship.

We also found evidence of a modest but significant positive relationship between the number of Teach First teachers in a school and pupil achievement at Key Stage 4, with schools with more Teach First teachers performing better than those with fewer Teach First teachers. The effect size was similar to that of eligibility for free school meals (FSM).

What factors can enhance the impact of Teach First teachers in their schools?
The main perceived facilitating factors to the effectiveness of Teach First teachers were the presence of a critical mass of Teach First teachers in the school, in-school support and support from Teach First. Clear school policies and freedom to take initiatives were also important. The main barriers were lack of in-school support, consistency of school policies and challenging circumstances in the school.

1. Introduction

In this publication we report the findings from the evaluation of the Maximum Impact Programme for Teach First. The Maximum Impact Programme aims to measure and improve the development and impact of their teachers in schools during their second year, through requiring Teach First teachers in their second year to complete learning logs or personal achievement record (PAR) guides, in which they document ambitious pupil learning-focused goals and provide regular updates on progress towards achieving them. These goals may be academic and classroom-based, or they may make a broader contribution to whole-school development.

As part of the Maximum Impact Programme, which sits within Teach First's leadership programme, this evaluation aims to assess the impact on teaching and leadership made by Teach First teachers in their schools.

Teach First is an independent charity launched in 2002 to bring excellent teachers into secondary schools in challenging circumstances across the UK. The mission of Teach First is to address educational disadvantage by transforming exceptional graduates into effective, inspirational teachers and leaders in all fields.

Teach First aims to close the achievement gap between disadvantaged and more advantaged pupils by recruiting and training top graduates to become excellent teachers in schools in challenging circumstances. Teach First teachers are committed to leading in their classrooms and overcoming the obstacles of deprivation in order to increase access, achievement and aspirations for the thousands of young people who lack the opportunities that many others take for granted.

Teach First:

- Recruits, trains, places and supports 500-600 teachers per year who aim to make a real difference in secondary schools in challenging circumstances throughout London, the North West, Yorkshire, and the East and West Midlands.
- Aims to build a new generation of leaders committed to addressing educational disadvantage, inside or outside of the classroom.

Teach First graduates are placed in secondary schools in challenging circumstances in England to teach for at least two years. For the years this report refers to, 'challenging circumstances' was defined as schools where less than 25% of young people achieved 5 GCSEs at Grades A* - C (including English and maths) and/or where at least 30% of the pupils were eligible for free school meals. The majority of participants teach priority subjects as defined by the Teacher Development Agency (TDA), which include mathematics, English, science, design and technology, information and communication technology, music, religious education and modern foreign languages.

A unique feature of the programme compared to other teacher training routes is that Teach First also aims to develop participants into leaders who will continue to address educational disadvantage in the long-term through careers both inside and outside of teaching.

Key questions reported on in this report are:
- Are Teach First teachers having a positive impact in their classrooms?
- Are Teach First teachers leaders inside and outside of the classroom?
- Are Teach First teachers having an impact on pupil achievement?
- What factors can enhance the impact of Teach First teachers in their schools?

2. Methodology

The key aim of the evaluation was to measure the impact of Teach First teachers on students and on leadership in the school during their second year. The evaluation also aimed to provide formative feedback on possible improvements to, and information on, the effectiveness of learning logs and PAR guides as evaluation instruments.

The approach we chose in this evaluation was a mixed methods design. We collected both quantitative and qualitative data. Quantitative data from surveys, existing datasets and classroom observation were used to measure outcomes, while qualitative data from case studies and interviews were used to develop deeper understanding of processes, and facilitators and barriers to success. While quantitative methods allowed us to look at the impact of the project on teaching quality, leadership capacity in the school and pupil achievement, qualitative methods, such as interviews with Teach First teachers, managers and colleagues in the school, helped us to look at ways of improving these outcomes.

This mixed methods design aimed to provide breadth and depth, while ensuring the collection of rigorous and replicable data on performance. The following methods were used:
- Survey questionnaires;
- Face-to-face interviews;
- Analysis of documentary data;
- Analysis of performance data.

In the next section, we will give a fuller explanation of these methods and their link to aims of the evaluation.

2.1. Impact on classroom processes

Teacher behaviours are a key outcome measure for this study as they are the strongest predictor of student progress over time (Muijs & Reynolds, forthcoming).

In order to look at the impact of Teach First teachers on learning, it was necessary to explore classroom processes to assess pedagogical strengths and relationships with students. To do this, the research team conducted classroom observations of Teach First teachers in the case study schools.

Lessons were videoed to ensure high levels of reliability, as it can be hard to rate behaviours reliably, on the spot, during live observations. For example, observers are typically required to rate teacher behaviours, such as 'the teacher uses clear explanations'. Their ratings can be subjective and unreliable if they are not subject to rigorous cross-checks and inter-observer reliability processes. This problem can be solved by using low-

inference observation schedules (using counts of such things as how many questions are asked by teachers, how many girls or boys answer questions, etc), but this wouldn't produce the data necessary to distinguish high-quality classroom processes that develop metacognitive (reflecting on one's own learning processes) and thinking skills, for example. Video allows multiple observations of the same lessons, carried out by multiple observers to ensure reliable inference. The International Systematic Teacher Observation Framework (ISTOF) classroom observation schedule was used to analyse the classroom observation data. This is an internationally validated rating scale (Tedlie et al, 2006; Kyriakides et al, 2008).

The survey of Teach First teachers also contained a number of questions on pedagogy. In this way we hoped to learn more about teacher behaviours, attitudes and interactions with students.

2.2. Impact of Teach First on leadership

As well as having an impact on student outcomes, Teach First teachers are expected to take leadership roles in the schools where they are placed. However, this leadership can take different forms.

The first of these is leadership in the classroom, where teachers can take on a transformational role and act as leaders of learning and as role models to their pupils.

The second are formal positions of leadership in the school, such as head of department, gifted and talented co-ordinator, head of year or attendance co-ordinator.

As well as formal leadership roles outside of the classroom, teachers can, and increasingly do, take part in leadership in more informal ways through teacher leadership (Harris & Muijs, 2004). Teacher leadership is most common in schools using distributed leadership, where leadership is shared by staff across the school rather than the domain of the head teacher or the senior management team (SMT). In many schools, increased emphasis on distributed leadership encourages teachers to be leaders, and it was important to ascertain the extent to which Teach First teachers were engaging in these new forms of leadership. To determine the extent to which Teach First teachers have taken on these formal and informal leadership roles, all Teach First teachers were surveyed.

One weakness in this design is, potentially, the reliance on teacher self-report. This could lead to an overestimation of the extent of the involvement of the teachers in leadership, and, in particular, in informal leadership roles. This problem may be exacerbated as Teach First teachers realise that leadership is an expectation for them. Therefore, the head teachers of the Teach First teachers were also surveyed to collect their views on the leadership of these teachers.

In addition to the surveys, 16 schools were selected as case study sites. Each case study school was visited during the course of the evaluation. As part of these visits, interviews were conducted with the Teach First teachers, their line managers, heads and members of the SMT. Interviewees were asked to comment on Teach First teachers' contribution to leadership in the school, in terms of both formal leadership roles such as curriculum co-ordinator or gifted and talented co-ordinator, and informal roles such as taking initiatives around teaching and learning, and being part of school improvement teams. Case study sites were selected to represent the variance in the population of schools in terms of geographical location, type of school, ethnic composition of pupils and school size.

2.3. Analysis of processes

A typical finding of evaluation studies is that, as well as the overall effect of the intervention, there is variance in impact between different settings and participants. To be able to explain this variance we needed to collect data on processes occurring in the schools. Providing recommendations for possible programme developments also required the collection of qualitative data to allow us to study the needs of Teach First teachers and their schools in depth.

To look at processes relating to impact on pupils and leadership we collected qualitative interview data in the case study sites. We interviewed Teach First teachers, the head teacher, a member of the SMT, the Teach First teacher's head of department and teaching colleagues. In these interviews, we explored issues such as Teach First teachers' experiences of teaching in their schools, the rewards and challenges they experienced, the extent to which Teach First has prepared them for teaching and leadership, and the support and barriers to achievement they perceived in their school contexts.

2.4. Analysis of pupil performance data

A quantitative methodology was used to explore the impact of Teach First on pupil attainment. National pupil and school level datasets were collected from the Department for Education (DfE, formerly the Department for Children, Schools and Families, DCSF) to allow us to look at performance measures controlled for student background over time. Pupil Level Annual Schools Census (PLASC) and National Pupil Database (NPD) data were requested from, and provided by, DfE for this purpose. Data were collected for each year from 2001 to 2009.

All Teach First schools were identified in the sample through their identifier (LAESTAB) number, and the year they joined Teach First was established.

In order to look at the impact of Teach First on performance, we opted for a quasi-experimental design where each Teach First school was matched to a school as similar as possible on key characteristics prior to taking part in the programme. Propensity score

matching, a statistical method used to match a comparison to a treatment group as closely as possible on a range of variables, was used to construct this sample by:

- Type of school (e.g. Voluntary Aided, Voluntary Controlled, Academy);
- Gender intake (co-educational, single sex boys, single sex girls);
- Performance levels (e.g. % achieving Key Stage threshold levels);
- Pupil intake characteristics (% of pupils identified as having special educational needs (SEN), percentage pupils eligible for free school meals);
- Location (using the Office for National Statistics' matched local authority statistical neighbours);
- School size (as indicated by pupil roll).

No schools could be matched identically against these criteria. However, as close a match as possible was sought. The data were matched for the three years prior to the school joining Teach First.

In a second phase of the analyses, we explored whether the number of Teach First teachers who had worked in each of the Teach First schools affected the impact of their school. Clearly, this method is limited in that it looks at data at the school rather than the teacher level, which makes causality hard to determine and confuses the impact of Teach First with other developments in school. To demonstrate causality three conditions need to be present:

1. The causal variable needs to precede the effect variable in time. This we can demonstrate using our methodology by looking at performance before the schools joined the Teach First programme compared to what happened after they joined.
2. The causal and effect variables need to be correlated with one another. This is demonstrated by the statistical analyses undertaken.
3. No third variable can be the cause of the relationship demonstrated under condition 2. This is something we cannot demonstrate using this methodology, as the Teach First and comparison schools may differ from one another in ways not captured by the NPD and PLASC data we used. For example, schools opting to partner with Teach First may have more dynamic and/or effective leadership than those that do not.

2.5. Analysis of the learning logs/PAR guides

As well as collecting new data, we analysed the learning logs and PAR guides, which are self-assessment forms completed by the Teach First teacher at various points in the year, documenting their progress towards their stated ambitious goals. This was done to study the extent to which Teach First teachers reached the ambitious goals they set for themselves. This has allowed us to evaluate the extent to which:

- The learning logs/PAR guides are effective as tools for Teach First teachers' self-evaluation and development

- Teach First teachers are able to formulate and achieve ambitious goals.

To do this we analysed the extent to which goals were met, to gain an indication of outcomes. We also explored whether the goals were sufficiently challenging, using comparisons with the other data we collected.

2.6. Data analysis

Quantitative data was analysed using appropriate statistical methods. In particular, we used regression, and where necessary multilevel regression, models to model the impact of Teach First, taking into account pupil background variables. Structural equation modelling was used to study more complex relationships in the data. More information on these methods can be found in Appendix 1.

Qualitative data collection and data analysis were closely integrated (Miles & Huberman, 1984). This strategy allowed the team to check out hypotheses as they emerged from data analysis and refine data collection strategies as the study progressed. A variety of procedures was used to ensure reliability (Stake, 1995). To increase confidence in research claims, the team used different data sources, including interview data, document analysis, observation data, and survey data, in order to provide us with robust information about the impact of the programme on teaching, leadership and pupil outcomes.

Documentary and interview data were also analysed using content analytic methods. Content analysis is a summarising, quantitative analysis of messages that relies on the scientific method (including attention to objectivity-intersubjectivity, a priori design, reliability, validity, generalisability, replicability and hypothesis testing) and is not limited as to the types of variables that may be measured or the context in which the messages are created or presented (Neuendorf, 2002). A coding scheme was developed and results quantified.

3. Key activities

3.1. Main strands of the evaluation

The evaluation consisted of four main strands:

- Surveys of Teach First teachers and head teachers
- Case studies of participating schools
- Analysis of performance data
- Analysis of documentary evidence.

1. Surveys of Teach First teachers and head teachers

A first survey of all second year participants and their head teachers was sent out in December 2008. In total, responses were received from 123 teachers and 36 head teachers, a response rate of 50% and 72% respectively. This is a higher than average response rate for social scientific research, with typical response rates being closer to 20%. Of course, a response rate of 50% does bring with it the risk of a lack of representativeness of the respondents, but we have no evidence at present of systematic bias, in that participating schools do not differ from non-participating schools on pupil intake, location or achievement levels.

A second participants' survey was sent out in December 2009. Responses were received from 280 teachers, out of 345, an 81% response rate, and head survey responses were received from 45 heads, a 67% response rate.

2. Case studies of participating schools

Sixteen case studies were completed. During the case studies all second year Teach First participants were observed and interviewed, along with senior managers in the school, the Teach First co-ordinator, middle managers and other classroom teachers.

Case studies were selected on the following bases:
- Geographic location, to ensure an equal distribution in London, North West and the Midlands. Of the 16 schools, seven were from London, five from the North West and four from the Midlands.
- Type of school, e.g. Faith school, Academy, etc. The aim here was maximum variation, i.e. representation of all types of schools in the sample. Of the 16 schools, five were Academies and five were Faith schools, which is not representative of the population. This was due to the non-participation of many initially contacted schools.
- Diversity of intake. Again, we were aiming at maximum variation. In practice, 11 of the 16 schools served a highly diverse multi-ethnic population, with no one ethnic group representing more than 50% of pupils, while the others were predominantly white working class, with over 70% of pupils belonging to this group.

In case study schools, we interviewed all second year Teach First teachers, their line manager, the head teacher, a member of the SMT and at least one colleague. Interviews were conducted during the case study visit on the school site during school hours. Lessons by all second year Teach First teachers were observed and recorded.

3. Analysis of performance data

Data from the National Pupil Dataset up to 2009 was analysed using multilevel statistical modelling.

4. Analysis of documentary evidence

PAR guides and learning logs were analysed using the aforementioned content-analytic framework. A total of 249 PAR guides and 185 learning logs were received by the research team, and all of these were analysed for the purpose of studying the extent to which Teach First teachers reached the two ambitious goals they set for themselves.

4. Findings

4.1 Impact of Teach First teachers in their schools

4.1.1. Teaching

4.1.1.1. Views of Teach First teachers on their impact and effectiveness in teaching

In general, Teach First teachers feel they are able to make a positive contribution to teaching in their schools, following a period of adaptation and induction in their first term. 79% of interviewees stated that they had made a positive contribution. In particular, they felt they are a dynamic presence in lessons, have good subject knowledge and can motivate pupils. A lot of the positives they perceive in their own teaching are related to dynamism and enthusiasm, which they and their colleagues see as motivating for pupils (74% of interviewees):

> *'I'd say I was firm but fair really. I'd like to think that I've got quite a lot of energy, quite creative; I'm really interested in coming up with new lesson ideas, new ways around the topic.'* (Teach First teacher).

A difficulty some interviewees faced was dealing with the range of pupil ability (mentioned by 38% of interviewees). In many of these schools serving disadvantaged communities, the range of ability is large and even set classes can contain very significant variances in pupil ability (Muijs & Reynolds, forthcoming). In one school which operates mixed abilities in classes, the interviewee found this hard at first because *'you have to differentiate your teaching'* as pupils have a *'huge range of ability'*. However, as another interviewee stated: *'They do prepare you to differentiate in the training we get'*. Teach First teachers also perceive themselves as confident in lesson planning (48%) as well as in the execution of those lessons (53%): *'I think we're quite confident with what we do and we always plan really good lessons'*. Teachers clearly feel that particular strategies are expected of them by their schools: *'We're expected to always teach in the way that other teachers do when they get observed'*. This manifests itself in advice and pressure from mentors and heads of department.

Teach First teachers have high expectations of pupils (87%). Several interviewees, however, mentioned that these needed to be adapted to the reality in which they found themselves (40%), as initial expectations may have been a *'bit unrealistic'* (Teach First teacher). However, as one interviewee pointed out, the pupils do step up to the higher expectations and, if the teacher then lowers the expectations, they can meet at a more *'realistic'* level in the middle. Pitching expectations within the context of the highest possible goals remains a challenge for Teach First teachers. This self-confidence is also demonstrated in the survey. Participants were asked to indicate the extent to which they felt they could influence different aspects in their teaching, using a validated self-efficacy scale rated from 1 (no impact) to 9 (very high impact). Results (see Table 1) indicate that

respondents tended to see themselves as able to make a difference in all areas, especially in their ability to offer alternative explanations and in helping students to value their learning. Respondents were least confident that they could assist families in helping their children to do well, though even for this item the mean score suggests a tendency to see themselves as being able to make at least some difference. Compared to international studies of newly qualified teachers (NQTs) from the US, Canada, Cyprus, Korea, Belgium, the Netherlands, Norway and Hong Kong (Woolfolk Hoy & Burke-Spero, 2005: Klassen et al, 2008; Muijs & Roe, 1997; Skaalvik et al, 2008), Teach First teachers score higher in most areas and, in particular, in motivating students and classroom management factors (2008 survey) and in controlling behaviour and crafting questions (2009 survey). They score lower on assisting families, possibly due to the highly disadvantaged nature of the schools they are working in, or to restrictive school policies that limit contact between classroom teachers and parents.

Table 1: Teacher self-efficacy scale mean scores

	Mean in TF sample (second year participant s08)	Mean in TF sample (second year participant s 09)	Mean of scale among teachers in int'l studies
How much can you do to control disruptive behaviour in the classroom?	6.4	6.9	6.1
How much can you do to motivate students who show low interest in school work?	7.3	6.6	6.4
How much can you do to get students to believe they can do well in schoolwork?	6.9	7.0	6.4
How much can you do to help your students value learning?	7.4	7.0	6.8
To what extent can you craft good questions for your students?	6.8	7.3	6.8
How much can you do to get children to follow classroom rules?	6.7	6.8	6.2
How much can you do to calm a student who is disruptive or noisy?	7.1	6.7	6.4
How well can you establish a classroom management system with each group of students?	7.1	6.8	6.6
How much can you use a variety of assessment strategies?	7.0	7.0	6.7
To what extent can you provide an alternative explanation or example when working with a group of students?	7.6	7.4	7.0
How much can you assist families in helping their children do well in school?	5.4	5.4	6.0
How well can you implement alternative strategies in your classroom?	6.5	6.4	6.5

4.1.1.2. School views on Teach First teachers on their impact and effectiveness in teaching

Schools are generally pleased with the teaching skills of Teach First teachers. All head teachers interviewed indicated this, as did 85% of other respondents. Teach First teachers appear to have good control over often challenging classes. Our observations show that pupils are overwhelmingly on task, i.e. engaged in the task the teacher has set them and not disrupting lessons. No major behaviour problems, such as refusal to co-operate, verbal dissension or abuse were seen during our observations.

Teach First teachers have strong subject knowledge, according to all interviewees. Initially, they are seen by some interviewees (32% of line managers) as naïve in the classroom, but they learn quickly: '*in the second year you see a tremendous change'* (Senior Manager), and we have observed that second year Teach First teachers are indeed effective in the classroom (see below). The first year is seen as challenging for Teach First teachers (68% of line managers, 85% of heads), '*but by the end of the second year they have evolved into outstanding teachers*' (Head Teacher). The quality of the mentor assigned to the teacher within the school is important in the light of the steep learning curve they are going through, with over half of the interviewed Teach First teachers (58%) stating that this was a major determinant of successful integration in their school. Mentoring by university tutors was seen as effective by the majority of respondents (67%).

The teaching practice of Teach First teachers is largely perceived as effective (all heads, 85% non-head respondents): '*Because they're dynamic they teach dynamically, and that always works with students.*' (Senior Manager).

According to the head teacher survey, Teach First teachers are also seen as being consistent in terms of their quality as classroom practitioners and regarding their knowledge.

Table 2: Responses to the head teacher survey on variability of quality (percentages)

	Agree Strongly		**Agree Somewhat**		**Disagree Somewhat**		**Disagree Strongly**	
	Second year participants 08	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*
There is a lot of variance in the quality of Teach First teachers	6.2	8.0	18.8	24.0	50.0	48.0	25.0	20.0

One school, for example, was so impressed by their first cohort of Teach First teachers that they recruited for three more posts from Teach First the following year, and have taken on a further two for the year after that. The interviewees were impressed by the Teach First teachers, describing them as hardworking, motivated, bright, committed and professional.

Overall, it was felt that Teach First teachers are confident and good, if not necessarily excellent, teachers (according to 69% of respondents).

4.1.1.3. Teach First teachers' pedagogy

A content analysis (see Appendix 4) was undertaken of the interview data from all interviewees except the Teach First teachers. In this case, keywords from interviews were measured to determine factors that are said to be typical of Teach First teachers. Keywords relating to teacher characteristics were collated, and converted into a percentage of total expressions. The most common are listed in Table 3 below:

Table 3: Percentage of keywords relating to Teach First teacher characteristics

Listen and learn from other teachers	23.9
Enthusiastic	18.5
Creative	13.7
Not creative	6.4
Hard working	6.4
Resilient	5.9
Energetic	5.8
Adaptive	5.7

85% of expressions fell in the eight categories above, seven of which were positive, and one of which (not creative) was negative. The latter accounted for just 6.4% of expressions. The most common expression used was that Teach First teachers listen and learn from other teachers, followed by enthusiasm and being creative (therefore, Teach First teachers were described as creative more than twice as often as they were described as not creative).

The Teach First teachers appear to pick up the teaching styles of the schools they work in: *'They very quickly adapt to the styles that are successful in the establishment they're in, and that's been quite clear to me'* (Head Teacher). The teaching styles of some of the Teach First teachers are described as innovative, creative and confident, with a strong presence in the classroom (40% of interviewees): '*Teach First teachers have a lot of creativity and energy, which you might not find with teachers who have gone through the traditional route and who, maybe, stick to tried and tested methods instead of trying new things*' (Senior Leader). There is also a willingness to listen to the views of others and act on that advice (35% of interviewees). One interviewee, for example, believed that there is a misconception amongst some Teach First teachers when they are in training that regular teachers aren't as good as them and are struggling, but *'when you get into your*

placement you realise that it isn't the case at all. In fact, the regular teachers (mostly) are fantastic at their jobs and, not only do you not have any idea what you're doing, but you're being quite arrogant to believe you can come into a school and change things instantaneously. I copy teachers all over the school, especially in terms of behaviour management. But maybe where our strengths lie is in terms of energy, because you know that you may only be there for a year or two so if you want to implement a scheme you have to do it now… and because you're only in there for a short time you have a chance to quickly try everything because you have nothing to lose.'

It was noted by one interviewee that the academic success of the Teach First students may be their *'weak point'* in that they have never experienced difficulty and so, at first, do not know how to deal with youngsters who do find life difficult. However, we did not observe any such issues in our case study visits.

The head teacher survey confirms that Teach First teachers take a relatively innovative approach to teaching, which was especially pronounced in the 2009/10 survey where over 75% 'agreed somewhat' or 'agreed strongly' that Teach First teachers take an innovative approach.

Table 4: Responses to head teacher survey on innovative teaching methods (percentages)

	Agree Strongly		**Agree Somewhat**		**Disagree Somewhat**		**Disagree Strongly**	
	Second year partici pants 08	*Second year partici pants 09*	*Second year partici pants 08*	*Second year partici pants 09*	*Second year partici pants 08*	*Second year partici pants 09*	*Second year partici pants 08*	*Second year partici pants 09*
Teach First teachers tend to use innovative teaching methods	18.7	34.2	43.8	44.0	12.5	12.0	25.0	8.8

Some Teach First teachers felt that their ability to employ innovative teaching methods was lessened by the difficult circumstances in which some of the schools they worked in found themselves, as they faced challenging circumstances and a low-achieving pupil population (29% of interviewees). In one school, participants experienced what they felt was a lack of encouragement to be innovative in their subjects, mainly because the school was in national challenge (a government initiative to improve the schools in which pupils are achieving least well in national tests at age 16, with less than 30% of pupils achieving 5A*-C grades at GCSE). This led to reluctance on the part of the school to be innovative in case results were affected. The school was under a great deal of pressure to improve and an innovation which doesn't work would therefore be seen as potentially impacting on the life-chances of the vulnerable learners.

Responses to the participant survey indicated that Teach First teachers take a measured approach to teaching. Their teaching shows both constructivist and direct instruction elements, though more of the latter than the former. (See Table 5). Constructivist teaching emphasises the learners constructing their own knowledge through social interaction and realistic tasks, while direct instruction focuses on whole-class interactive methods aimed at mastery of small chunks of knowledge before moving on to the next step. Teach First teachers use constructivist methods, such as getting pupils to think about previous lessons, but, in general, tend towards a structured, teacher-led approach that has been found to be effective with pupils in disadvantaged circumstances (e.g. Muijs & Reynolds, forthcoming; Muijs et al 2004; De Jager et al, 2005).

Table 5: Teach First participants views of their own pedagogical approaches (percentages)

	Like me		**Not like me**		
	Second year participants 08	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*	
When I'm teaching, I make sure I always refer to the content of previous lessons	37.3	35.0	62.7	65.0	When I'm teaching, I get my students to think about previous lessons
It is often necessary to explicitly instruct students so they don't develop misconceptions and don't waste time	59.7	60.8	40.3	39.2	It is always better to let students find out by themselves, so they can construct their own learning
It is better to start with general principles and then give examples	47.7	46.7	52.3	53.3	It is better to start with examples before going on to general principles
I usually get my students to discover what the objectives of the lesson may be through specific challenges and activities	13.4	12.6	86.6	85.8	I usually clearly explain the objectives of lessons myself at the start of the lesson

Students from disadvantaged backgrounds need more opportunities to express themselves in lessons	24.3	32.4	75.8	67.6	Students from disadvantaged backgrounds need more structure in lessons
As a teacher I need to actively instruct students for large parts of the lesson	55.3	56.9	44.7	43.1	As a teacher I am mainly there to facilitate students' group work or individual activities
Clear structures are less important than individual expression for student learning	11.9	13.6	88.1	86.4	Students need clear structures to learn effectively
A high pace is essential, otherwise students will get bored and we won't be able to cover the curriculum	71.2	79.6	28.8	20.4	A slower pace is essential so students can develop a proper understanding of the topic

Video recordings of classroom teaching were analysed using the International Systematic Teacher Observation Framework (ISTOF) observation schedule.

The ISTOF Teacher Observation Protocol was designed by an international team of experts in the area of teacher effectiveness to measure observable teacher behaviours consistent with effective classroom teaching (Teddlie et al, 2006). The ISTOF Teacher Observation Protocol has 21 indicators spread across seven components of effective teaching. Each indicator is represented by two or three items, resulting in a total number of 45 items. The items are rated on a five-point Likert scale, with values ranging from 'strongly agree' (5) to 'strongly disagree' (1).

There is also a 'NA' (not applicable, unable to observe) response option since some of the items may not be relevant or observable in some classroom settings.

The protocol can be used in primary (from the age of six) as well as secondary education. Mean ratings on each item are presented in Table 6, alongside the mean rating on the instrument in a number of international studies. These were conducted with a broader group of teachers, who were on average both more experienced and less likely to be

working in schools in disadvantaged areas than Teach First teachers (Kyriakides et al, 2008).

Table 6: ISTOF mean scores

Category	**Indicator**	**Item**	**Teach First teachers mean**	**European studies mean**
ASSESSMENT AND EVALUATION	The teacher gives explicit, detailed and constructive feedback	The teacher makes explicitly clear why an answer is correct or not	4.3	4.2
		The teacher provides his/her feedback on the answers given by the students	4.4	4.0
	Assessment is aligned with goals and objectives	Assignments given by the teacher are clearly related to what students learned	3.5	3.3
		The teacher explains how assignments are aligned to the learning goals of the lesson	3.2	2.9
DIFFERENTIATION AND INCLUSION	The teacher creates an environment in which all students are involved	Students communicate frequently with one another on task-oriented issues	3.8	3.7
		Students actively engage in learning	4.2	4.0
	The teacher takes full account of student differences	The teacher makes a distinction in the scope of the assignments for different groups of students	3.5	3.1
		The teacher gives additional opportunities for practice to students who need them	3.4	3.5
CLARITY OF INSTRUCTION	The teacher shows good communication skills	The teacher regularly checks for understanding	4.4	4.5
		The teacher communicates in a clear and understandable manner	4.6	4.3
	Clear explanation of purpose	The teacher clearly explained the purposes of the lesson	4.0	3.4

		The teacher asks students to identify the reasons why specific activities take place in the lesson	3.4	2.9
	Lessons are well structured	The teacher presents the lesson with a logical flow that moves from simple to more complex concepts	4.7	4.5
		The teacher implements the lesson smoothly, moving from one stage to another with well-managed transition points	4.6	4.6
INSTRUCTIONAL SKILLS	The teacher is able to engage students	The teacher provides sufficient wait time and response strategies to involve all types of learners	3.7	4.0
		The teacher gives assignments that stimulate all students to active involvement	4.1	4.0
	The teacher possesses good questioning skills	The teacher poses questions which encourage thinking and elicit feedback	3.5	3.6
		The length of the pause following questions varies according to the difficulty level of questions (e.g., a question calling for application of abstract principles requires a longer pause than a factual question)	3.9	3.6
	The teacher uses various teaching methods and strategies	The teacher uses a variety of instructional strategies during the class period	4.0	3.7
		The teacher uses different strategies for different groups of students	3.2	3.3

PROMOTING ACTIVE LEARNING AND DEVELOPING METACOGNITIVE SKILLS	The teacher helps pupils develop problem-solving and meta-cognitive strategies	The teacher invites students to use strategies which can help them solve different types of problems	3.6	3.5
		The teacher invites students to explain the different steps of the problem-solving strategy which they are using	3.3	3.5
		The teacher explicitly provides instruction in problem-solving strategies	3.1	3.0
	The teacher gives students opportunities to be active learners	The teacher encourages students to ask each other questions and to explain their understanding of topics to one other	3.4	3.7
		The teacher gives students the opportunity to correct their own work	3.4	3.3
		The teacher motivates the students to think about the advantages and disadvantages of certain approaches	4.2	3.8
		The teacher asks the students to reflect on the solutions/answers they gave to problems or questions	3.6	3.5
		The teacher invites the students to give their personal opinion on certain issues	3.2	3.5
	The teacher connects material to students' real world experiences	The teacher systematically uses material and examples from the students' daily life to illustrate the course content	3.0	3.0
		Students are invited to give their own examples	3.8	3.4

CLASSROOM CLIMATE	All students are valued	The teacher demonstrates genuine warmth and empathy towards all students in the classroom	4.4	4.5
		The teacher shows respect for the students both in his/her behaviour and use of language	4.6	4.7
	The teacher initiates active interaction and participation	The teacher creates purposeful activities that engage every student in productive work	4.7	4.6
		The teacher's instruction is interactive (lots of questions and answers)	4.3	4.7
	The teacher interacts with all students	The teacher gives turns to and/or involves those students who do not voluntarily participate in classroom activities	4.5	4.4
		The teacher seeks to engage all students in classroom activities	4.4	4.6
	The teacher communicates high expectations	The teacher praises children for effort towards realising their potential	4.5	4.4
		The teacher makes clear that all students know that he/she expects their best efforts in the classroom	4.6	4.4
CLASSROOM MANAGEMENT	Learning time is maximised	Teacher starts lesson on time	5.0	4.6
		Teacher makes sure that students are involved in learning activities until the end of the lesson	4.7	4.3
		Actions are taken to minimise disruption	4.9	4.5
	Clear rules are evident	There is clarity about when and how students can get help	4.4	4.4
		There is clarity about what options are available when the students finish their assignments	3.3	3.8

	Misbehaviours and disruptions are effectively dealt with	The teacher corrects misbehaviour with measures that fit the seriousness of the misconduct (e.g., she does not overreact	4.7	4.6
		The teacher deals with misbehaviour and disruptions by referring to the established rules of the classroom	4.1	3.8

As can be seen in the table, Teach First teachers consistently rated above the midpoint of the scale for the factors observed, indicating overall high levels of teacher effectiveness. They also rate similarly to the international sample, which consists of experienced as well as novice teachers who, on average, have much more experience than the Teach First sample. However, there are clear differences in performance across the different areas. Teach First teachers are particularly strong in creating a positive classroom climate, averaging over 4 on all items. They also rate highly on classroom management, in particular on correcting misbehaviour and minimising disruption, and on instructional skills, with lessons that run smoothly and follow a logical progression. Where Teach First teachers are somewhat weaker is in promoting active learning and metacognitive skills, rating between 3 and 4 on most items, with the lowest overall rating of 3 being on the item 'The teacher systematically uses material and examples from the students' daily life to illustrate the course content'.

Lessons were well prepared, and a high pace was maintained throughout. Pupils appeared engaged, with time on task levels of over 84% in all cases. Use was made of visual and audiovisual aids, and especially of the electronic whiteboard. There was an appropriate emphasis on discipline as a precondition for learning, and few behaviour problems were observed – and they were appropriately dealt with where they were. It was apparent that, in some schools, participants were using whole-school behaviour management approaches.

Pedagogies tended to follow a whole-class interactive approach, with fast-paced questioning mixing recall and higher order questions, though often more of the former than the latter. There was appropriate use of individual work, and some good use of group work was observed. The nature of the pedagogies observed tended not to be particularly focused on exploration or pupil-led work. Contingent praise was used well.

Overall, the standard of teaching by Teach First teachers observed was good to excellent as evidenced by the ISTOF rating means being above 3 or 4 and largely focused on whole-class interactive methods. Relationships in the classroom were good, with pupils reacting positively to the teachers. There were some occasions where teachers might too easily be assuming a shared vocabulary with pupils, in the sense that they sometimes have overly high expectations of pupils' vocabulary.

4.1.2. Leadership

The positive impact of Teach First teachers on leadership is widely recognised by senior staff in the schools visited, as well as by external visitors such as higher education staff working on school improvement with the schools.

Teach First participants are seen as a very visible presence within their schools and as contributing significantly to leadership through a range of high profile leadership roles and activities such as being gifted and talented co-ordinator, literacy co-ordinator, or leading assemblies. Teach First teachers frequently take up formal leadership roles. According to the participant survey, more than a third of participants hold formal leadership roles (36.1% in 2008/2009, 35.1% in 2009/2010), most commonly that of subject leader (10% in 2008/09, 9.7% in 2009/10), though some participants are heads of department (5% in 2008/09, 4.7% in 2009/10) or, notwithstanding their inexperience, deputy/assistant heads (5.7% in 2008/2009, 1.4% in 2009/2010). According to the head teacher survey, subject leadership, pastoral leadership and departmental headship are Teach First teachers' most common roles, with 47% of head teachers stating that at least one of their Teach First teachers has taken on one of these roles.

Teach First teachers put themselves forward for such roles, as well as organising out-of-school activities, such as trips to businesses and enrichment activities (76%). Their background is seen as helpful here: '*because they have generally had a very good education themselves, they will try to give these same experiences to our pupils, and they have the confidence to know that the pupils will react well to this. They are committed, enthusiastic and intelligent*' (Middle Manager). Teach First teachers frequently lead on initiatives. In one case study school they feel they are all being offered a free rein to implement certain schemes and being offered responsibility by senior leaders in the department: *'If you want to do something, and you take your suggestion to the senior leaders, I've never been turned down and they also let me plan trips and implement new schemes from my first term onwards'*. In fact, as one respondent commented: *'Teach First teachers' energy, enthusiasm and willingness to take things on is of great benefit to the school and offsets their lack of experience in the classroom*' (Senior Leader). Some Teach First teachers take on both formal and informal leadership roles outside the classroom: *'I'm organising trips for gifted and talented to the University and another Teach First colleague is doing the Book Awards and has also applied for, and got, a year director post, so she'll stay for another year'* (Teach First teacher). The fact that Teach First participants tend to be well networked is seen as beneficial for the school, as they can draw on these networks to bring prominent individuals into the school (25% of interviewees).

Teach First teachers are seen as hard working and highly ambitious (78% of interviewees), a fact borne out by the comments of participants who are keen, if they stay at the school, to quickly move on to management roles such as head of department (60% of interviewees said they were keen to do this). Their ambition is noted, and though some

teachers see them as pushy, others claim that this is a major positive as '*people with drive create change*' (Senior Manager). The fact that they show a willingness to take a lead works as an exemplar to other teachers, according to 33% of interviewees. An example of leadership includes interviewees setting up a house point system and presenting it to the SLT. One interviewee has sat on the teaching and learning group and has organised two school competitions. During her first year, one of the Teach First teachers became the leader of her department due to maternity leave and did an *'absolutely outstanding job'* (Head Teacher). She took a group of year 11s who were not expected to pass and produced a 60% A to C pass which was *'phenomenal'* (Head Teacher). She has also influenced how the now returned head of department teaches by introducing her to new strategies.

Survey results suggest that Teach First teachers feel that they make an impact in terms of taking initiative and are consulted by colleagues and line managers. They don't see themselves as being particularly involved in decision-making at more senior levels. Schools attribute this to their inexperience, as well as to the steep learning curve they have to go through in year 1 of the programme.

Table 7: Teach First teachers' views on involvement in leadership (percentages)

	Agree Strongly		**Agree Somewhat**		**Disagree Somewhat**		**Disagree Strongly**	
	Second year participants 08	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*
The head teacher often consults me about teaching and learning	5.9	4.7	10.3	13.2	19.1	26.1	64.7	56.0
I am strongly involved in change management and school improvement in my school	6.2	5.1	27.7	24.2	32.3	31.2	33.8	39.5
The head teacher allows me to take initiatives and make my own decisions	19.1	11.7	39.7	48.4	33.8	20.7	7.4	19.1
In my school I feel I am a valued member of the leadership team	6.0	5.6	26.9	19.2	28.4	31.2	38.9	44.0

I often take initiatives to start something new in school	31.3	23.1	44.8	47.4	22.4	24.3	4.5	5.2
Colleagues often consult me about teaching	20.6	15.4	50.0	61.4	25.0	16.5	4.4	6.7
My line manager often asks my opinion	29.4	29.4	41.2	40.5	17.6	17.9	11.8	12.3

Table 8: Head teachers' views on participants' involvement in leadership (percentages)

	Agree Strongly		**Agree Somewhat**		**Disagree Somewhat**		**Disagree Strongly**	
	Second year participants 08	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*
I often consult Teach First teachers about teaching and learning	13.3	15.6	40.0	47.9	40.0	28.1	6.7	8.4
Teach First teachers are making a strong contribution to change management and school improvement in my school	0.0	7.8	6.2	28.5	31.3	36.2	62.5	27.5
Teach First teachers are too inexperienced to take on leadership roles in my school	31.2	11.3	31.3	31.6	25.0	40.7	12.5	16.4
Teach First teachers often take initiatives to start something new in school	37.5	48.0	37.5	39.7	18.8	8.0	6.2	4.3
Teach First teachers leave the school too soon to make a strong contribution to school culture	12.5	19.2	31.3	28.4	18.7	31.1	37.5	21.3

The head teacher survey confirms these views. The majority of head teachers feel that Teach First participants are too inexperienced to strongly take part in change management and school improvement, but they do frequently take the initiative. There are mixed views as to whether or not the length of time Teach First teachers are in the school affects their ability to influence school culture in terms of creating a climate of high expectations in which pupils can achieve academically.

Leadership ability depends on support from the school as well as the individual's organisational skills and his/her willingness to attend to detail when leading an initiative, according to 47% of interviewees: *'The word inexperienced comes to mind; they're enthusiastic, they need coaching, but given the coaching and given support they're very successful'* (Middle Manager). Most of the schools studied encourage Teach First teachers to join in events and take responsibility for organising initiatives that they are interested in: *'They're certainly capable of exercising leadership. It depends on the circumstance, but given responsibilities to carry out they do them very well'* (Head Teacher).

The contribution of Teach First teachers has also been noticed by external consultants working with one school. One academic working with a school on lesson study commented that '*The Teach First teachers are really leading the group, and taking it forward. They are fantastic*'. As well as being actively engaged in leadership roles, such as leading learning and teaching groups and out-of-school activities, they exercise informal leadership through their enthusiasm and hard work. Head teachers similarly show enthusiasm for this aspect of their work (all interviewed head teachers) '*they are fantastic, superb*' (Head Teacher).

Teach First participants are deemed to have a particularly positive impact in schools struggling to reach satisfactory levels of pupil achievement (65% of interviewees): '*As a failing school, our main task was raising morale and expectations, and having the highest quality graduates in crucial departments really helped*' (Head Teacher). They are seen as raising the academic standards of colleagues (42% of interviewees): '*One of the things they bring to the teaching profession is people who are really academic*' (Senior Manager). '*Teach First teachers come into the school with the idea that they will be leaders, and that sets the ethos'* (Head Teacher).

To conclude, respondents feel that Teach First teachers are making a strong contribution to informal leadership in the case study schools. They are seen as eager to take initiative and as making a positive contribution to school culture. However, there are mixed views as to the extent to which they can contribute to the formal leadership of the school, with some respondents seeing them as too inexperienced, while in other case study schools Teach First teachers have been given formal leadership positions.

Again, a content analysis was undertaken of those terms mentioned with regards to the leadership outside the classroom of Teach First teachers. The most common terms are listed below:

Table 9: Leadership keywords

Take initiatives	36.9
Formal leadership roles	14.5
Enthusiasm	9.0
Lack of experience	8.5
Make lasting impression	8.0
Lack of time	7.6

85% of terms could be categorised within one of these six categories. By far the most frequently mentioned set of terms referred to Teach First teachers taking initiatives in the school. Formal leadership roles were the second most frequently mentioned, followed by enthusiasm. 16.1% of terms were categorised as negative. These related mainly to lack of experience and lack of time to take on leadership.

4.2. Facilitators and barriers

Content analysis was conducted on the factors identified by Teach First teachers in interviews as barriers to, and facilitators of, success. The main terms found were:

Table 10: Key facilitators and barriers

Facilitators		**Barriers**	
Critical mass of Teach First teachers in school	25.7	Adaptation period	21.8
In-school support	16.5	Lack of in-school support	21.4
Support from Teach First	9.8	Challenging circumstances of school	18.6
Clear and consistent school policies	9.0	Pupils' social background	10.3
Freedom to take initiatives	8.3	Poor pupil behaviour	9.5
Two-year term	7.6		
Good relationships in school	6.6		

The main factors that facilitate success are the presence of a critical mass of Teach First teachers in the school, in-school support and support from Teach First. Clear school policies and freedom to take initiatives are also important. The main barriers to success are the adaptation period in year 1, in that Teach First teachers appear to go through a steep learning curve, especially in their first semester , which limits their effectiveness during that period; lack of in-school support, challenging circumstances in the school, and, linked to that, poor pupil behaviour.

The first term in school is hard for Teach First teachers, as they initially have some problems adapting to the classroom (71% of Teach First teachers). As one teacher remarked: '*At Christmas, I wanted to leave, but I'm so glad I didn't*' (Teach First participant). Another interviewee has concerns about the speed with which Teach First teachers are put in a classroom on their own, questioning whether some candidates may find the situation too much: '*I know the early days were very tough, there were tears,*

there were upsets and a lesser individual may well have found it slightly overwhelming' (Teach First teacher). Participants suggested that schools can work around the programme and help Teach First candidates by organising more *'protected time'* to ease them into the first term to a greater extent to allow time for planning and the paperwork of the training course.

The selection process at Teach First is seen as very good. 75% of interviewees specifically commented on this aspect of the programme without interviewer prompting. Some Teach First teachers (12%) do feel that the six-week induction period is short. One interviewee, however, felt that while you can't prepare anyone to teach in six weeks this isn't a bad thing, because you learn on the job and, in the long term, benefit from those difficult first months.

One interviewee commented on what she saw as the homogeneous social background of Teach First teachers, which is rather different from that of the pupils. However, in the words of this interviewee: '*Saying that, this never appears to be a problem for the pupils*' (Middle Manager). It does, however, seem to trouble a minority of staff who appear to worry about the extent to which Teach First teachers can relate to pupils from very different backgrounds to their own. No evidence of problems in this regard was found in our classroom observations.

As is apparent from the content analysis, the level of support given by the department to which the Teach First teachers are attached plays a significant part in their overall experience at the school. For example, one interviewee was the only teacher in the department because the head of department went on maternity leave. This meant that, although she had the opportunity to take on much of the department head role, she also had no departmental support. Where time allowed, a deputy head provided additional support, but much of the time the Teach First teacher felt left on her own. Another participant joined a department which lacked cohesion and had poor communication so that it did not operate as a department, but consisted of '*individual teachers'*. Similarly, lack of communication is cited by one interviewee as the main challenge to working in his school, in terms of not getting pertinent information. For example, this resulted in last-minute timetable revisions leading to his lessons being cancelled or to changes to exams. This is obviously problematic in view of the disruption caused to pupils.

As well as formal and informal support to Teach First teachers, clear school-wide policies and procedures are mentioned as an important facilitating factor by many interviewees (40% of Teach First teachers). One interviewee commented that: *'All the pupils are treated equally, which is good for Teach First teachers because they have a clear set of guidelines to follow and this structure helps them as they don't have much experience'* (Senior Leader). A coherent approach and a strong, set order of activities have been found to be important to the achievement of pupils, especially those vulnerable to school failure such as pupils eligible for free school meals (Muijs et al, 2004; Creemers & Kyriakides, 2006). Some Teach First teachers feel that not all schools prepare sufficiently for their participation: one interviewee

commented that Teach First teachers will be coming in and eager to take on extra responsibilities, and should therefore be encouraged and given scope to do so. She says that many of her friends in other schools have been '*battling against the system to get things pushed through, whereas we've been lucky here*'.

Support from Teach First is also seen as important and is perceived very positively. One participant, for example, believes that Teach First teachers get a lot more support from outside the school, which enables them to bring more new ideas into the classroom, particularly compared with other NQTs. Teach First as an organisation is seen as very supportive (76%): *'If you need the support it's there, definitely'* (Teach First teacher). Teach First will contact teachers on the programme straight away if they hear on the *'grape vine, which they always do'* that teachers are struggling.

Levels of support from senior management were varied among Teach First teachers (mentioned by all). In-school mentoring arrangements and line management were not, in all cases, strong, and appear inconsistent across Teach First schools. This hinders the possible impact Teach First teachers can make (mentioned by 44%) by limiting their professional development opportunities in school, especially the opportunity to learn and receive feedback from more experienced teachers. A critical mass of Teach First teachers is also important to their influence in the school (mentioned by 52% of Teach First teachers). As one Teach First teacher commented: '*We have a big influence because there are quite a lot of us and we're quite young and it's quite a progressive environment anyway, so people are open to trying new things. I don't think this is necessarily down to the fact that we're Teach First, but more that our school is open minded about change.'*

Behaviour management is a major training need for many interviewees, especially in the early phases of teaching (mentioned by 63%). According to one interviewee, for example, the main challenge is behaviour and '*getting that under control. It was very important from the beginning that I didn't have people walking all over me'* (Teach First teacher). The interviewee has developed a number of behaviour management techniques because *'if you can't get the children to behave and listen how can you do anything creative with them in a lesson?'*.

Some staff complain about the two-year term of Teach First teachers, seeing this rapid turnover as somewhat destabilising (25% of interviewees). However, others feel that this is not untypical for NQTs more generally (12%). As one head teacher commented: '*in this city, in any case, a lot of young staff don't stay long; they want to live outside the city, so we are used to that kind of turnover*' (Head Teacher). Another interviewee commented that '*while it is true that they are here for only two years, in that two years you get 18 months of absolute quality education, and if they do go out to industry or the professions they are ambassadors with empathy for inner city education*' (Senior Manager). Teach First participants at times see the attitudes of the school and its management as an impediment to staying on after two years (20%): '*if we felt we were valued, and not that we are being exploited, we would probably stay longer*' (Teach First participant). From the point of view of some schools, greater efforts to encourage Teach

First teachers to stay on after two years would therefore be welcomed. Notwithstanding the two-year term, there is evidence (as discussed above) that the presence of Teach First teachers has an impact on school culture that goes beyond the time any individual teacher is there. This is evident in the comments from head teachers on Teach First teachers' contributions to leadership, and in the comments on their contribution to school expectations by non-Teach First staff.

That a large proportion of Teach First teachers do stay on in education is demonstrated by the destination data collected by the Teach First organisation. Between 2003 and 2007, almost 50% of Teach First teachers stayed in teaching in England after their two-year stint, while another 16% stayed in education (see Table 11).

Table 11: Teach First teachers destinations, 2003-2007

Destination	Percentage
Teaching in UK	49
Teaching overseas	4
Education outside of the classroom	12
Not in education	35

According to schools and participants, two key areas that can be further developed to maximise impact are support in the school and the training provided.

Teach First teachers need a lot of input and support from other staff, particularly in the first term which could *'make or break'* them depending on which classes they are allocated to teach and how the department is organised. Of course, some Teach First teachers are successful whatever the circumstances. But there is evidence that strong mentoring can help ease the transition to the classroom, and many Teach First teachers interviewed commented on the usefulness for them of strong mentor support.

Interviewees feel that Teach First has prepared them to teach as well as they could do (65% of interviewees) *'I think in some ways they prepare you as well as they can because nothing really prepares you for coming in'.* As one participant observed, if Teach First prepared people too well, *'you'd be so frightened that you wouldn't want to do it!'.* However, one aspect of the teaching preparation that could be improved is preparing teachers for teaching lower ability pupils. This is seen as a problem by some interviewees (16%) and quite a few teachers and managers in the school (37%). For example, one interviewee had a year 11 pupil who couldn't tell her whether 17 was greater than 300: *'I haven't been prepared to teach that'.* This was perceived to be a major area where Teach First teachers need support. *'Teaching bright kids the hard stuff is easy, teaching really low ability kids what you think is really simple is so hard because you can't understand why it's so hard'.* Another area that could be emphasised more is behaviour management, as the main issue that participants felt hindered their effectiveness was pupil behaviour (see Table 12), and this may be an aspect that deserves further attention in training.

Table 12: What are the main challenges to your teaching? (percentages)

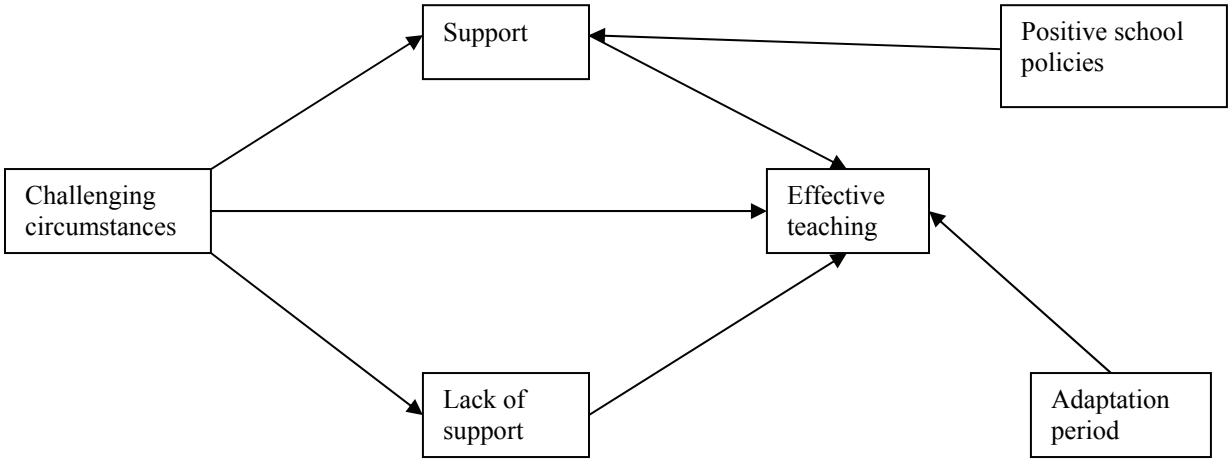
	Never		**Sometimes**		**Often**		**Always**	
	Second year participants 08	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*	*Second year participants 08*	*Second year participants 09*
Pupil behaviour	4.4	2.3	30.9	40.8	47.1	40.4	17.6	16.6
Lack of support from colleagues	25.0	36.0	45.6	44.3	27.9	17.8	1.5	1.9
Haven't had enough training	31.3	31.4	53.7	54.2	10.5	14.0	4.5	0.4
Not enough other Teach First teachers here	74.6	78.4	17.9	15.5	3.0	3.4	4.5	2.7
Lack of support from parents	10.6	14.8	59.1	59.7	28.8	24.3	1.5	1.1
Lack of support from the head	33.3	38.4	39.4	40.3	19.7	17.1	7.6	4.2
Students come from very different backgrounds	19.4	34.5	59.7	46.2	19.4	16.7	1.5	2.7
Violence in school	19.7	37.3	59.1	49.8	18.2	10.6	3.0	2.3

Participants suggested that more practical training on factors such as behaviour management would be useful during the induction phase. Examples of what teachers will experience in the classroom, '*actual practices we can use*' (Teach First participant), are seen as useful. Another thing that is seen to be potentially useful is for Teach First to provide schemes of work, as not all schools and departments appear to have this resource. Setting up a Teach First working group to do this is seen as a possible way forward.

Having a critical mass of Teach First teachers can be helpful, to both provide mutual support and a greater impact on other teachers in the school.

In order to test whether the barriers and facilitators identified in the content analysis (see Table 10) are related to teaching quality, a model was tested using a structural equation modelling approach (see Appendix 1), with total scores on the ISTOF scale (see Table 6) as outcome variables. Individual ratings for each teacher on the ISTOF scale were summed to construct a total 'effective teaching' score, while their responses on the facilitator/barrier questions, as identified through content analysis, were used as the independent variables (with number of mentions in interviews being the operationalisation for each individual).

The model tested assumed the following relationships:



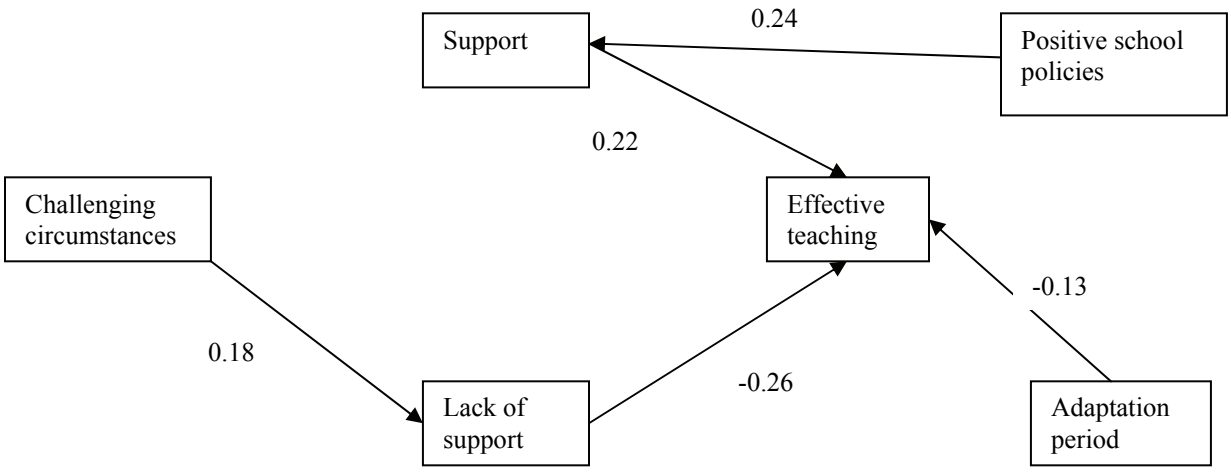
We therefore hypothesised that the extent to which schools are seen as being in challenging circumstances will influence both positive support and lack of support for Teach First teachers, while also directly affecting the effectiveness of teachers as found in a previous study (Muijs & Reynolds, 2003). Positive support is hypothesised to positively relate to effective teaching, the opposite being true of lack of support. Difficulties with adaptation are hypothesised to be negatively related to effective teaching, while positive school policies are hypothesised to be positively related to support.

Model-data fit was tested using a variety of fit indices. The fit indices in Table 13 show that, while not strictly fitting according to the Chi square test (the large sample size produces very strong power to detect minor misfits) the alternative fit indices do indicate that the model fits the data well.

Table 13: Fit Indices

Chi Square	Df	RMSEA	CFI	GFI
298.3	36	0.48	0.96	0.96

Some of the predicted relationships were not significant, however. Figure 2 gives all the significant paths and the standardised coefficients. Coefficients vary between -1 and 1, with -1 representing a perfect negative relationship (more of a means less of b), 1 a perfect positive relationship (more of a means more of b) and 0 no relationship between the variables. No significant relationship was found between challenging circumstances and positive support, and no direct relationship between challenging circumstances and effective teaching.



The strongest predictor of effective teaching was lack of support (a negative correlation indicating that lower levels of perceived support are related to less effective teaching). The second most significant predictor was positive support, meaning that where the school supported Teach First teachers strongly they were likely to be more effective; and the third strongest predictor was the year 1 adaptation period. In this case, the more an adaptation period was mentioned, the lower teacher effectiveness. Positive school policies were related to positive support, while challenging circumstances were related to lack of support. School factors thus had a significant indirect relationship with effective teaching by Teach First teachers.

5. Performance data analysis

A quantitative methodology was used to explore the question of impact of Teach First on pupil attainment. National pupil and school level datasets were collected from the Department for Education (DfE) to allow us to look at performance measures controlled for student background over time. Pupil Level Annual School Census (PLASC) and National Pupil Database (NPD) data were requested from, and provided by, the DfE for this purpose. Data were collected for each year from 2001 to 2009.

All Teach First partnering schools were identified through a list provided by Teach First, and their individual school (LAESTAB) number and the year the school first partnered with Teach First were established.

In order to look at the impact of Teach First on performance, we opted for a quasi-experimental design where each Teach First school in the sample was matched to a school as similar as possible on key characteristics prior to joining Teach First. National datasets were used to match schools by:

- Type of school (e.g. Voluntary Aided, Voluntary Controlled, Academy)
- Gender intake (co-educational, single sex boys, single sex girls)
- Performance levels (e.g. % achieving Key Stage threshold levels)
- Pupil intake characteristics (% pupils identified as having special educational needs, percentage pupils eligible for free school meals)
- Location
- School size (as indicated by pupil roll).

Obviously, no schools could be matched identically on these criteria. However, as close a match as possible was sought in all cases.

These data were matched as closely as possible for the three years prior to the school partnering with Teach First, using propensity score matching. We then looked at whether Teach First partner schools outperformed those matched schools not partnered with Teach First, with a view towards getting some indication of whether or not Teach First had a positive impact on pupil achievement. Obviously, this does not prove causality. To do so, three conditions need to be present:

1. The causal variable needs to precede the effect variable in time. This we can demonstrate using our methodology by looking at performance before the schools joined the Teach First programme compared to what happened after they joined.
2. The causal and effect variables need to be correlated with one another. This is demonstrated by the statistical analyses undertaken.
3. No third variable can be the cause of the relationship demonstrated under condition 2.

Condition '3' is something we cannot demonstrate using this methodology, as the Teach First and comparison schools may differ from one another in ways not captured by the

NPD and PLASC data we used. For example, schools opting to partner with Teach First may have greater capacity for improvement than those that do not.

Overall, no significant differences were found between Teach First schools and comparator schools on any of the matching characteristics.

The outcome measure used was normalised pupil-level GCSE points scores weighted for subject, number of GCSEs taken and school subject GCSE distribution.

Multilevel statistical models (see Appendix 2) were used to look at the impact of Teach First on performance. Levels were school (Level 2) and pupil (Level 1). As the data relates to different cohorts in different years, analysis of each year was done separately.

We tested models for each year following schools partnering with Teach First. A null model was formulated with no predictors. In the next model 'Teach First status' (partnering with Teach First) was added, while in the final model for each year other correlates of achievement were included, such as gender, SEN status and FSM eligibility. Outcome variables were pupil level achievement grades. Full results are presented in Appendix 3.

5.1. 2003 Cohort

Two-level multilevel models, with pupils nested within schools, were used to measure the relationship between Teach First status and performance over time. A*-C grades at GCSE was the (pupil-level) outcome measure. Initially, an empty model was fitted, while in the second model Gender, Age, FSM eligibility, SEN status, and IDACI (Income Deprivation Affecting Children Index) status were added as predictors at the pupil level, and school size as a predictor at the school level. At baseline, in 2003, none of these predictors was significantly related to outcomes, unsurprisingly in view of the fact that schools were matched on these criteria. Only schools that had participated in the programme for at least four of the following six years were included in the analyses, making a total of 27 Teach First and 27 comparator schools.

We then ran the same models for the years from 2004 to 2009. As the samples were carefully matched on these variables, it is not surprising that most predictors were not significantly related to the outcomes. Teach First status is significantly related to outcomes from 2005 onwards, with pupils in Teach First schools on average showing higher levels of performance at GCSE. This is suggestive of impact, although other factors, such as prior capacity to change in Teach First partnering as opposed to non-partnering may of course be a causal factor as well. The correlation of Teach First status with outcomes is quite strong, explaining between 38.9% (2005) and 46.5% (2006) of school-level variance in achievement - that is the variance in achievement between pupils that can be attributed to them attending different schools rather than to individual differences between them. This is approximately (taking into account the fact that pupils

take different numbers of subjects and different qualifications) equivalent to 2 to 2.4 GCSE points per student per subject, or a third of a GCSE grade.

The full tables are in Appendix 3.

5.2. 2004 cohort

A similar modelling strategy was used for the 2004 cohort, although only ten Teach First and ten comparison schools were included in the sample. In this cohort there were again no initial differences between Teach First and non-Teach First partnering schools, but from 2007 onwards pupils in Teach First schools start to outperform pupils in non-partnering schools. Participation in Teach First explains 20.5% of the variance at the school level in 2007 (approximately 1.2 GCSE points), a percentage that has increased to 35.5% in 2009 (approximately 2.7 GCSE points). The IDACI code was also a significant predictor of outcomes.

5.3. 2005 cohort

For the 2005 cohort there is less evidence of a correlation between achievement and Teach First partnership over time. The only year in which we find a significant Teach First correlation is 2008.

5.4. 2006 cohort

A similar modelling strategy was used for the 2006 cohort. Eleven Teach First schools that had been part of the programme for at least two of the following three years, and 11 comparison schools were included in the analyses.

For the 2006 cohort there is some evidence of impact of Teach First over time. Overall, the majority of the variance is explained at the pupil level (Level 1). However, variance at the school level is also significant. Teach First partnering is significantly related to outcomes from 2007 onwards, with a strong increase in the strength of the correlation in 2008 and 2009, explaining up to 22% of between-school variance (approximately 1.6 GCSE points per pupil per subject). The IDACI code is also a significant predictor of outcomes in 2009.

5.5. 2007 cohort

For the 2007 cohort, 26 Teach First schools that had been part of the programme for at least two of the following three years, and 26 comparison schools, were included in the analyses. Teach First partnering is significantly related to outcomes from 2007 onwards,

though the strength of the relationship doesn't increase over time as it did for the 2006 cohort.

The explained variance is around 22% (approximately 1.8 GCSE points).

These results are summarised in table 14 for all cohorts. Years in which there is a significant difference in performance between Teach First partnering schools and non-partnering schools (with Teach First schools showing higher performance levels) are indicated with an X.

Table 14: When do Teach First schools outperform non-Teach First schools? (X indicates a statistically significant positive relationship between school partnering with Teach First and pupil attainment)

		Cohort				
		2003	*2004*	*2005*	*2006*	*2007*
Year	2003					
	2004					
	2005	X				
	2006	X				
	2007	X	X		X	X
	2008	X	X	X	X	X
	2009	X	X		X	X

Overall, there is evidence of a correlation between participation with Teach First and achievement, which appears one to two years following the first year of participation up to 2005, and more quickly in the following cohorts. This relationship is highly significant, especially as Teach First participation is measured at the school level, rather than at the classroom level where the Teach First teachers actually operate. School effectiveness research has consistently shown, firstly, that the classroom level explains more of the variance in pupil outcomes than the school level, and, secondly, that variables measured at the most appropriate level and as proximal as possible to the outcome have a greater impact. Therefore, finding an impact like this at the school level is suggestive of possible stronger effects at the classroom level.

This relationship, of course, does not imply causality, as mentioned above. Data are for all pupils in the school, not just those taught by Teach First teachers. Schools may differ in effectiveness, with more dynamic and effective schools possibly taking up the opportunity to take part in Teach First more readily. A variety of intervening factors may have caused the relationship, such as changes in leadership or teacher recruitment. In order to test for intervening variables we conducted an analysis of Ofsted grades for leadership, teaching and overall grades, where again we compared Teach First partner schools and comparison schools. No significant differences were found, and the range of grades within Teach First partner schools did not differ significantly from that within

comparison schools or across the sample overall. Nevertheless, other differences not measured by Ofsted may exist. We recognise that Ofsted inspections are snapshots of practice, measured under varying frameworks at different points in time. Therefore, this data cannot provide a full picture of leadership quality over the timeframe of this evaluation. Clearly, however, the pattern exposed here is suggestive and worthy of further study.

5.6. Relationship between pupil outcomes and number of Teach First teachers in the school

In order to further explore the relationship between Teach First participation and pupil outcomes, we regressed the number of Teach First teachers in partnering schools on the pupil outcome measure, weighted GCSE grades (see above). The hypothesis was that a larger number of Teach First teachers might have a greater impact as a result of a greater impact on school culture, or through the facilitating effect of a critical mass of Teach First teachers as indicated in some of the qualitative data. Percentage of pupils eligible for FSM, percentage of pupils with SEN, percentage boys and percentage pupils from ethnic minorities were also entered into the regression models. This was done for every year from 2003 to 2009. Table 15 shows the standardised regression coefficients (Beta). It is important to note that these analyses only refer to those schools that partner with Teach First, and don't include any of the comparator schools. What we have done here is, therefore, to calculate the number of Teach First teachers in each Teach First partner school, and correlate this variable with the outcome variable, along with variables such as FSM eligibility. All the variables were standardised, to allow us to compare the size of the effects between variables. This is because the variables are each measured on different scales. The Beta coefficients therefore allow direct comparison of the relationship of each of the independent variables to the outcome variable. Beta coefficients vary between -1 and 1, with 1 representing a perfect positive relationship (if A goes up, B goes up), -1 a perfect negative relationship (if A goes up, B goes down), and 0 representing no relationship.

Table 15: Relationship of number of Teach First teachers in the school to pupil outcomes at KS4

	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Percentage of pupils eligible for FSM	-.12	-.10	-.13	-.17	-.11	-.13	-.14
Percentage of pupils with SEN	-.24	-.30	-.24	-.26	-.32	-.30	-.29
Percentage boys	NS	-.06	NS	NS	-.11	-.07	-.05
Percentage pupils from ethnic minorities	NS	NS	.05	NS	NS	.06	.05
Number of Teach First teachers	NS	.09	NS	.13	.14	.11	.13

As can be seen in Table 15, the number of Teach First teachers in the school has a significant weak to modest positive relationship with school level outcomes. The strength

of the relationship is weaker than that with SEN or FSM percentages (though of a similar order to the latter), but stronger than that with percentage ethnic minorities or boys. It is also clear that the effect of the number of Teach First teachers strengthens in the later years of the project.

6. Learning logs & PAR guides

As well as collecting new data, we analysed the learning logs and personal achievement record (PAR) guides, which are self-assessment forms completed by the Teach First teacher at various points in the year, documenting their progress towards their stated ambitious goals. The learning logs were replaced by the PAR guides in 2009.

6.1. Analysis of learning logs (2008/09)

Content analysis was used to analyse goals in terms of ambition and clarity, and to test for the extent to which goals had been achieved.

Goals in the learning logs were analysed according to type of goal:

- Just under 50% of goals related to achievement, most typically the achievement of specific grades in the subject taught, e.g. pupils to achieve two grades above predicted KS2 levels.
- 23.5% of goals related to curriculum, e.g. developing a new GCSE option, increasing uptake in the subject at A-level, etc.
- 20.6% of goals related to extra-curricular activities, e.g. setting up a debating or sign language club, or visits to arts institutions.
- 3.1% of goals related to assessment, e.g. creating a grid for student results,
- 2.9% related to pedagogy, e.g. implementing teaching of literacy.

Learning logs were analysed according to clarity of goals, ambitiousness of goals and achievement of goals. Each goal was rated on a four-point scale, from unsatisfactory to very good, in line with the self-assessment of participants. Results are given in Table 16.

Table 16: Clarity, ambition and achievement of goals in percentages

	CLARITY	**AMBITION**	**ACHIEVEMENT**
Very good	44.1	29.4	29.6
Good	41.2	52.9	43.9
Satisfactory	14.7	17.7	23.6
Unsatisfactory	0	0	2.9

As can be seen in the table, the vast majority of goals set out were very clear or clear, with just under 15% reaching only satisfactory levels. The majority of goals were clearly articulated, with measurable outcomes specified at all levels. In some cases, however, the goals were hard to measure, making the achievement of success a somewhat subjective category.

The majority of goals were rated as ‘good’ in terms of ambition. Typically, a ‘very good’ level of achievement of the outcomes would mean that all pupils in the classroom were achieving above expectations, or all targeted pupils were engaged in a programme such as a language class. ‘Satisfactory’ achievement of the goals would mean that a large proportion of pupils are exceeding targets, with the others on average achieving to target.

29.4% of goals were seen as very ambitious, 17.7% were rated as satisfactory, which would mean that most pupils are achieving the levels predicted, and a proportion exceeding predicted levels of achievement.

Achievement relates to the extent to which the goals stated were achieved as evidenced by the teachers in their learning logs. In over 40% of cases the goals were largely achieved, meaning that 75% or more of the goals had been reached. Very good achievement means that between 75% and 100% of goals were reached, while satisfactory means that minimum goals were reached, with between 50% and 75% of goals reached. In a small number of cases goals were not reached. It is important here to point out that this assessment was not the same as the self-assessment of candidates. In the majority of cases the self-assessment of participants was accurate, but in about 35% of cases self-assessment was either somewhat optimistic or overly negative in the views of the research team. There is evidence that over-ambitious goals were too hard to achieve.

6.2. Analysis of personal achievement record (PAR) guides (2009/10)

A first comment to make is that, in comparison with the old style learning logs, the new PAR guides have been completed more comprehensively. Also, 87% of goals now relate to achievement, with the remainder relating to extra-curricular activities or the curriculum.

Table 17: Clarity, ambition and achievement of goals in percentages

	CLARITY	**AMBITION**	**ACHIEVEMENT**
Very good	55.9	34.3	32.4
Good	23.5	39.2	42.8
Satisfactory	20.6	26.5	21.2
Unsatisfactory	0	0	3.6

As can be seen in the table, the vast majority of goals set out were very clear or clear. Compared to the previous learning logs, more Teach First teachers' goals were very clear, but more were just satisfactory as well. A similar picture emerges with regards to ambition, with again more respondents showing very good, and more respondents showing satisfactory levels of ambition compared to the previous results in the learning logs. Slightly more respondents have fully met their goals than previously.

7. Conclusion

In this report we have explored the question of what the impact of Teach First teachers can be. We looked at their impact on classroom practice, leadership and pupil achievement.

Our general conclusion is that there is converging evidence of a positive impact of Teach First teachers in this report. While none of the elements of this evaluation, in and of themselves, can demonstrate conclusively that Teach First teachers are having a positive impact, taken together the evidence of impact is compelling:

- Quantitative analysis shows positive pupil outcomes in Teach First schools compared to comparator schools;
- Quantitative analysis shows that having a larger number of Teach First teachers in the school is related to more positive outcomes;
- Classroom observation data show that Teach First teachers in their second year are effective classroom practitioners;
- Survey data show that Teach First teachers believe that they can make a difference to pupils, and head teacher surveys back this up;
- Survey data indicate that Teach First teachers are leaders in and outside their classrooms;
- Interview data confirm that Teach First teachers are seen as leaders in their schools and as effective practitioners by their second year in the school.

These data are summarised in more detail below.

Head teachers are pleased with the teaching skills of Teach First teachers. Our observations show that Teach First teachers have good control over often challenging classes. Pupils are overwhelmingly on task.

Teach First teachers are seen as having excellent subject knowledge, and express high expectations of pupils. They have above average levels of self-efficacy, which means that they themselves feel that they can make a difference in the classroom.

A content analysis was undertaken of the interview data from the non-Teach First staff members, such as head teachers and middle managers. The most common expression used for Teach First teachers was that they listen and learn from other teachers, followed by enthusiasm, and being creative. In general, it was felt that Teach First teachers adapt their practice to that of the school they are placed in.

Lessons were videoed and analysed using an internationally validated rating scale, the International Systematic Teacher Observation Framework (ISTOF). These analyses showed that Teach First teachers consistently rated above the midpoint of the scale for the factors observed, indicating overall high levels of teacher effectiveness. However, there are clear differences in performance across the different areas. Teach First teachers are particularly strong in creating a positive classroom climate. They also rate highly on

classroom management and on instructional skills, with lessons that run smoothly and follow a logical progression. Where Teach First teachers are somewhat weaker is in promoting active learning and metacognitive skills, with the lowest overall rating being on the following measure: 'The teacher systematically uses material and examples from the students' daily life to illustrate the course content'.

Are Teach First teachers leaders inside and outside of the classroom?

Teach First teachers bring high self-efficacy, high expectations and a range of experiences into the classroom, which enable them to act as classroom leaders.

Outside of the classroom, the impact of Teach First teachers on leadership is widely recognised by senior staff in the schools visited, as well as by external consultants, such as higher education staff, working with the schools.

Teach First teachers are seen as a very visible presence in their schools and as contributing significantly to leadership. They engage in a range of high-profile leadership roles and activities, such as being gifted and talented or literacy co-ordinators, and leading assemblies. Teach First teachers put themselves forward for such roles, as well as organising out-of-school activities, such as trips to businesses and enrichment activities.

Survey results suggest that Teach First teachers feel that they make an impact in terms of taking initiatives and being consulted by colleagues and line managers. They don't see themselves as being particularly involved in decision-making at more senior levels. Schools attribute this to their inexperience as well as to the steep learning curve they have to go through in year 1 of the programme.

Are Teach First teachers having an impact on pupil achievement?

In order to look at the impact of Teach First on performance, we opted for a quasi-experimental design where each Teach First school was matched to a school as similar as possible on key characteristics three years prior to partnering with Teach First. National datasets were analysed using multilevel models.

Overall, there is evidence of a correlation between partnering with Teach First and pupil achievement, which appears one to two years following the first year of partnership. Typically, where significant, Teach First status explains between 20% and 40% of the between-school variance in pupil performance at GCSE. This is particularly evident for the 2003, 2004 and 2006 cohorts. This relationship, of course, does not imply causality. Data are for all pupils in the school, not just those taught by Teach First teachers. A variety of intervening factors may have caused the relationship, such as the prior effectiveness or leadership of the school, with more effective schools possibly keener to take part; unmeasured differences in pupil intake; changes in exam subjects or unmeasured staff changes other than the intake of new Teach First teachers. Nevertheless,

the pattern exposed here is suggestive of a positive correlation between Teach First teacher participation in a school and pupil attainment, and is worthy of further study.

We also found evidence of a modest but significant positive relationship between the number of Teach First teachers in a school and pupil achievement at Key Stage 4, with schools with more Teach First teachers performing better than those with fewer Teach First teachers.

What factors can enhance the impact of Teach First teachers in their schools?

We analysed the factors identified by Teach First teachers in interviews as barriers to, and facilitators of, success. The main perceived facilitating factors were the presence of a critical mass of Teach First teachers in the school, in-school support and support from Teach First. Clear school policies and freedom to take initiatives were also important. The main barriers were the adaptation period in year 1, lack of in-school support, and challenging circumstances in the school, such as the concentration of pupils from low socio-economic status backgrounds.

In order to test whether the barriers and facilitators identified in the content analysis were related to teaching quality, a model was tested with total scores on the classroom observation scale as the outcome variable (this can be seen as an 'effective teaching' variable) and barriers and facilitators as predictors.

The strongest predictors of effective teaching were lack of support (a negative correlation indicating that lower levels of perceived support are related to less effective teaching), followed by positive support and a perceived adaptation period (negative relationship). Positive school policies were related to positive support, while challenging circumstances were related to lack of support. School factors thus had a significant indirect relationship with effective teaching by Teach First teachers.

8. Recommendations

Some recommendations following from this are:

1. Monitoring of school support for participants may need to increase to ensure greater homogeneity.
2. Formal mechanisms to encourage peer support among Teach First participants in a particular area could be strengthened, to provide an additional form of mentoring that would be helpful in easing the transition to the classroom for Teach First teachers.
3. Clarity as to what to expect in the classroom could be enhanced in training
4. Strong support mechanisms inside of, and outside of, schools need to be developed in all cases.
5. Whole school effectiveness and clear policies affect the effectiveness of Teach First teachers.
6. Teach First induction needs to emphasise the need to pitch expectations within the context of the highest possible goals.
7. Teach First induction must ensure that sufficient attention is paid to theories of learning, and teaching methods that facilitate learning-to-learn and metacognitive strategies.
8. In extending the programme, Teach First will have to ensure that the quality of candidates and training is maintained.
9. Classroom level data (such as pupil outcomes) should be collected to allow stronger inferences on the impact of Teach First teachers to be made.

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Appendix 1: Structural equation modelling

Structural equation modelling has been defined as 'a comprehensive approach to testing hypotheses about relations between variables' (Hoyle, 1998). This technique, which measures the fit of pre-specified directional relationships between the variables to the covariance matrix used, allows us to model directional relationships between variables, while also taking into account measurement error in the data.

One of the advantages of structural equation modelling is that it allows one to model the data as indicators of underlying variables. This is theoretically sensible, as in all cases measurement is indirect, questions on teacher behaviour, for example, being designed to be indicators of actual teacher behaviours. In our model, the latent variables positive support (indicators: critical mass of Teach First teachers, in-school support and support from Teach First, good relationships in school), positive school policies (clear and consistent school policies and freedom to take initiatives), challenging circumstances (school challenging circumstances, pupil social background, poor pupil behaviour), lack of support (lack of in-school support), and adaptation time -were modelled as predictors of teacher effectiveness as measured through the ISTOF scale.

Error variances were fixed according to estimates of measurement reliability (see Hayduk, 1997), with coefficients ranging from .15 to .25 (questionnaire and classroom observation data).

Appendix 2: Multilevel modelling

Multilevel modelling (MLM), also known as hierarchical linear modelling (HLM) is an extension multiple linear regression, which we are using for two main reasons. One is statistical, the other more substantive and related to fundamental research questions we might want to ask.

The statistical reason is related to sampling. Multiple linear regression, (along with most related methods) assumes that we have a random sample from the population of interest. In this case, this would mean a random sample of pupils. However, the data set is actually a 'hierarchical' or 'cluster' sample in which pupils are 'nested' in schools.

This will mean that we are faced with a situation in which pupils within a school are more similar to one another on a variety of characteristics than they are to the sample as a whole. One reason for this is that school catchment areas tend to be more homogeneous in terms of social class than society as a whole. The social background of pupils within a school is therefore more similar than that of pupils nationally. Also, the fact that pupils are in a particular school means that they influence one another, and that they are all influenced by the culture of the school they are in. This has an important statistical consequence. Whenever we have clustered samples it means that if we just use multiple linear regression, and pretend we have a random sample, we will probably be underestimating the extent of standard error of the variance (the standard deviation of the predicted true value for a given observed value). This may lead to the effect of certain predictor variables wrongly being classified as statistically significant.

The second reason to use MLM is substantive. Often in educational research we are interested in finding out about certain characteristics of schools and classrooms, and how they relate to pupil characteristics. For example, we might want to know whether what teachers do in the classroom (how they interact with pupils or what teaching style they have) affects pupils' performance. What multilevel modelling allows us to do is to look at how much of the variance in pupils' achievement is explained at the individual level, how much at the classroom level and how much at the school level, for example.

Appendix 3: Full multilevel models

1. 2003 Cohort

Two-level multilevel models, with pupils nested within schools, were used to measure the relationship between Teach First membership and performance over time. A*-C grades at GCSE was the (pupil-level) outcome measure. Initially, an empty model was fitted, while in the second model Gender, Age, Free School Meal eligibility, SEN status, and IDACI (Income Deprivation Affecting Children Index) status were added as predictors at the pupil level, and school size as a predictor at the school level. At baseline, in 2003, none of these predictors was significantly related to outcomes, unsurprisingly in view of the fact that schools were matched on these criteria. Only schools that had participated in the programme for at least four of the following six years were included in the analyses, making a total of 27 Teach First and 27 comparator schools.

Table A1: baseline multilevel models

	A*-C - Coefficient (standard error)	A*-C - Coefficient (standard error)
Intercept	9.46 (3.86)	12.3 (5.38)
Teach First		NS
Gender		NS
Age		NS
FSM		NS
SEN		NS
School size		NS
IDACI status		NS
Ethnicity		NS
Level 2 percentage variance	11.7	11.2
Level 1 percentage variance	88.3	88.8
Explained percentage variance Level 2		5.3%
Explained percentage variance Level 1		0.0%
Total percentage explained variance		0.6%

NS = variable not significant

Table A2: 2006 multilevel models

	2004 A*-C - Coefficient (standard error)	2005 A*-C - Coefficient (standard error)	2006 A*-C - Coefficient (standard error)	2007 A*-C - Coefficient (standard error)	2008 A*-C - Coefficient (standard error)	2009 A*-C - Coefficient (standard error)
Intercept	12.3 (5.38)	5.6 (1.0)	10.2 (1.8)	10.2 (1.8)	8.7 (0.7)	9.5 (1.7)
Teach First	NS	3.1 (1.4)	3.8 (1.1)	2.5 (1.1)	3.4 (0.9)	3.4 (0.8)
Gender	NS	NS	NS	NS	NS	NS
Age	NS	NS	NS	NS	NS	NS
FSM	NS	NS	NS	NS	NS	NS
SEN	NS	NS	NS	NS	0.02 (0.01)	0.04 (0.01)
School size	NS	NS	NS	NS	NS	NS
Ethnicity	NS	0.5 (0.2)	NS	0.8 (0.3)	0.6 (0.2)	0.5 (0.2)
IDACI status	NS	NS	NS	NS	1.7 (0.5)	1.8 (0.5)
Level 2 percentage variance	10.2	9.4	7.5	9.5	11.1	11.4
Level 1 percentage variance	89.8	90.6	92.5	92.5	88.9	88.6
Explained percentage variance Level 2	4.7%	38.9%	46.5%	36.5%	39.9%	40.5%
Explained percentage variance Level 1	0.0%	4.1%	1.2%	1.3%	9.5%	8.6%
Total percentage explained variance	0.4%	6.1%	6.6%	4.7%	7.3%	8.2%

NS = Variable not significant

Table A2 shows that, for the 2003 cohort, there is some evidence of impact of Teach First over time. Overall, the majority of the variance is explained at the pupil level (Level 1). However, variance at the school level is also significant. It is important here to point out that pupil level variance is not the same thing as pupil social background, as is often wrongly supposed. Rather, this may be a range of factors, including ability, motivation, and, to a large extent, measurement error.

As the samples were carefully matched on these variables, it is not surprising that most predictors were not significantly related to the outcomes. Teach First status is significantly related to outcomes from 2005 onwards. This suggests impact, although other factors, such as prior capacity to change in Teach First, as opposed to non-Teach First schools, may of course be a causal factor as well. The correlation of Teach First status with outcomes is quite strong, explaining nearly half of school level variance.

2. 2004 cohort

A similar modelling strategy was used for the 2004 cohort, though only ten Teach First and ten comparison schools were included.

Table A3: baseline measures

	A*-C - Coefficient (standard error) – Null Model	A*-C - Coefficient (standard error) – Full Model
Intercept	10.52 (0.32)	12.6 (0.90)
Teach First		NS
Gender		NS
Age		NS
FSM		NS
SEN		NS
School size		NS
Ethnicity		
IDACI status		
Level 2 percentage variance	16.6	15.4
Level 1 percentage variance	83.4	84.6
Explained percentage variance Level 2		3.4%
Explained percentage variance Level 1		0.2%
Total percentage explained variance		0.6%

NS = Variable not significant

Table A4: 2005-2009 measures

	2005 A*-C - Coefficient (standard error)	2006 A*-C - Coefficient (standard error)	2007 A*-C - Coefficient (standard error)	2008 A*-C - Coefficient (standard error)	2009 A*-C - Coefficient (standard error)
Intercept	8.5 (1.6)	8.0 (0.7)	8.0 (0.6)	8.2 (0.6)	9.6 (0.6)
Teach First	NS	NS	5.4 (2.6)	6.6 (2.3)	6.9 (2.3)
Gender	NS	NS	NS	NS	NS
Age	NS	NS	NS	NS	NS
FSM	NS	NS	NS	NS	NS
SEN	NS	NS	NS	NS	NS
IDACI code	NS	1.3 (0.2)	1.5 (0.3)	1.2 (0.3)	1.8 (0.4)
Ethnicity	NS	NS	NS	NS	NS
School size	NS	NS	NS	NS	NS
Level 2 percentage variance	17.0%	16.3%	15.7%	13.5%	12.9%
Level 1 percentage variance	83.0	83.7	84.3	86.5	87.1
Explained percentage variance Level 2		15.5%	20.5%	28.1%	35.5%
Explained percentage variance Level 1		0.0%	3.4%	4.1%	3.6%
Total percentage explained variance		2.9%	5.9%	6.7%	6.9%

NS = Variable not significant

As for the 2003 cohort, Table A4 shows that for the 2004 cohort there is some evidence of impact of Teach First over time. Overall, the majority of the variance is explained at the pupil level (Level 1). However, variance at the school level is also significant.

As the samples were carefully matched on these variables, it is not surprising that most predictors were not significantly related to the outcomes. Teach First status is significantly related to outcomes from 2007 onwards. This suggests impact, although other factors, such as prior capacity to change in Teach First as opposed to non-Teach First schools may of course be a causal factor as well. The correlation of Teach First status with outcomes is quite strong, explaining around a quarter of school level variance. IDACI code (Income Deprivation Affecting Children Index) is also a significant predictor of outcomes.

3. 2005 cohort

A similar modelling strategy was used for the 2005 cohort. Thirteen Teach First schools and 13 comparison schools were included in the analyses.

Table A5: baseline measures

	A*-C - Coefficient (standard error) at GCSE – Null Model	A*-C - Coefficient (standard error) at GCSE – Full Model
Intercept	8.45 (0.28)	9.20 (0.74)
Teach First		NS
Gender		NS
Age		NS
FSM		NS
SEN		NS
School size		NS
Ethnicity		
IDACI status		
Level 2 percentage variance	14.6	14.2
Level 1 percentage variance	81.4	85.8
Explained percentage variance Level 2		2.5%
Explained percentage variance Level 1		0.1%
Total percentage explained variance		0.5%

NS = Variable not significant

Table A6: 2006-2009 measures

	2006 A*-C - Coefficient (standard error)	2007 A*-C - Coefficient (standard error)	2008 A*-C - Coefficient (standard error)	2009 A*-C - Coefficient (standard error)
Intercept	7.7 (1.2)	7.5 (1.3)	7.8 (1.4)	8.2 (1.2)
Teach First	NS	NS	3.4 (1.2)	NS
Gender	NS	NS	NS	NS
Age	NS	NS	NS	NS
FSM	NS	NS	NS	NS
SEN	NS	NS	NS	NS
IDACI code	NS	1.0 (0.2)	NS	NS
Ethnicity	NS	NS	NS	NS
School size	NS	NS	NS	NS
Level 2 percentage variance	14.3%	15.3%	13.5%	14.6%
Level 1 percentage variance	85.7	84.7	86.5	83.4
Explained percentage variance Level 2		8.2%	13.4%	28.1%
Explained percentage variance Level 1		2.6%	1.2%	4.1%
Total percentage explained variance		3.3%	2.4%	6.7%

NS = Variable not significant

Table A6 shows that, for the 2005 cohort, there is less evidence of impact of Teach First over time. The only year in which we find a significant Teach First correlation is 2008.

As the samples were carefully matched on these variables, it is not surprising that most predictors were not significantly related to the outcomes.

4. 2006 cohort

A similar modelling strategy was used for the 2006 cohort. Eleven Teach First schools that had been part of the programme for at least two of the following three years, and 11 comparison schools were included in the analyses.

Table A7: baseline measures

	A*-C - Coefficient (standard error) – Null Model	A*-C - Coefficient (standard error) – Full Model
Intercept	11.33 (0.48)	12.2 (0.67)
Teach First		NS
Gender		NS
Age		NS
FSM		NS
SEN		NS
School size		NS
Ethnicity		
IDACI status		
Level 2 percentage variance	15.7	15.9
Level 1 percentage variance	84.3	84.1
Explained percentage variance Level 2		3.0%
Explained percentage variance Level 1		0.4%
Total percentage explained variance		0.8%

NS = Variable not significant

Table A8: 2005-2009 measures

	2007 A*-C - Coefficient (standard error)	2008 A*-C - Coefficient (standard error)	2009 A*-C - Coefficient (standard error)
Intercept	9.2 (2.2)	9.1 (1.7)	8.0 (0.6)
Teach First	3.2 (1.4)	5.7(2.7)	6.5 (2.4)
Gender	NS	NS	NS
Age	NS	NS	NS
FSM	NS	NS	NS
SEN	NS	NS	NS
IDACI code	NS	NS	1.3 (0.3)
Ethnicity	NS	NS	NS
School size	NS	NS	NS
Level 2 percentage variance	14.1%	12.5%	15.7%
Level 1 percentage variance	85.9	87.5	84.3
Explained percentage variance Level 2		13.5%	22.3%
Explained percentage variance Level 1		0.2%	4.5%
Total percentage explained variance		3.8%	7.1%

NS = Variable not significant

For the 2006 cohort, there is some evidence of the impact of Teach First over time. Overall, the majority of the variance is explained at the pupil level (Level 1). However, variance at the school level is also significant.

As the samples were carefully matched on these variables, it is not surprising that most predictors were not significantly related to the outcomes. Teach First status is significantly related to outcomes from 2007 onwards, with a strong increase in the strength of the correlation in 2008 and 2009. This is suggestive of impact, although other

factors, such as prior capacity to change in Teach First as opposed to non-Teach First schools may of course be a causal factor as well. IDACI code (Income Deprivation Affecting Children Index) is also a significant predictor of outcomes in 2009.

5. 2007 cohort

A similar modelling strategy was used for the 2006 cohort. Twenty-six Teach First schools that had been part of the programme for at least two of the following three years, and 26 comparison schools were included in the analyses.

Table A9: baseline measures

	A*-C - Coefficient (standard error) – Null Model	A*-C - Coefficient (standard error) – Full Model
Intercept	12.34 (1.43)	12.57 (1.60)
Teach First		NS
Gender		NS
Age		NS
FSM		NS
SEN		NS
School size		NS
Ethnicity		
IDACI status		
Level 2 percentage variance	16.1	15.9
Level 1 percentage variance	83.9	84.1
Explained percentage variance Level 2		2.5%
Explained percentage variance Level 1		0.5%
Total percentage explained variance		0.9%

NS = Variable not significant

Table A10: 2008-2009 measures

	2008 A*-C - Coefficient (standard error)	2009 A*-C - Coefficient (standard error)
Intercept	10.6 (1.9)	10.4 (1.1)
Teach First	5.1(2.7)	6.0 (2.2)
Gender	NS	NS
Age	NS	NS
FSM	NS	NS
SEN	NS	-1.4 (0.5)
IDACI code	NS	NS
Ethnicity	NS	NS
School size	NS	NS
Level 2 percentage variance	14.7%	15.5%
Level 1 percentage variance	85.3	84.5
Explained percentage variance Level 2	22.2%	24.9%
Explained percentage variance Level 1	0.4%	3.9%
Total percentage explained variance	3.5%	8.4%

NS = Variable not significant

For the 2007 cohort, there is some evidence of impact of Teach First over time. Overall, the majority of the variance is explained at the pupil level (Level 1). However, variance at the school level is also significant.

Teach First status is significantly related to outcomes from 2007 onwards, with a strong increase in the strength of the correlation in 2008 and 2009. This is suggestive of impact, although other factors, such as prior capacity to change in Teach First as opposed to non-Teach First schools may of course be a causal factor as well. SEN status is also a significant predictor of outcomes in 2009.

Appendix 4: Content analysis

Content analysis refers to any technique for making inferences by objectively and systematically identifying specified characteristics of messages (Holsti, 1969), and is a summarising, quantitative analysis of messages that relies on the scientific method (including attention to objectivity-intersubjectivity, a priori design, reliability, validity, generalisability, replicability and hypothesis testing) and is not limited as to the types of variables that may be measured, or the context in which the messages are created or presented (Neuendorf, 2002).