Department for Education

TLIF Evaluation: The Teacher Development Trust CPD Excellence Hubs project

Final Report

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Government Social Research

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Key findings summary

- The Teacher Development Trust (TDT) CPD Excellence Hubs project aimed to improve the leadership, culture and structures/processes of CPD in participating schools. TDT worked with a CPD lead in each of 39 primary and secondary schools drawn from five areas: Blackpool; Northumberland; Sheffield; South-Central Hertfordshire and Stoke-on-Trent. Each area formed an 'Excellence Hub', led by an Expert Advisor (EA) from a Lead School. The EAs were senior leaders, seconded from their schools for two days per week. TDT and the EAs supported schools by auditing their CPD provision and assessing progress against the TDT CPD Quality Framework, providing fortnightly coaching conversations, developing middle leaders, and providing half-termly hub meetings.

- DfE Management Information showed that 40 schools were initially recruited to the project against a target of 40, although one school subsequently dropped out. The project did not quite meet its target for school recruitment in priority areas, with 97 per cent of recruited schools located in category 5 or 6 areas against a target of 100 per cent.

- CPD leads' engagement with the whole-school CPD audits, regular coaching conversations with the EAs, and half-termly CPD leader forums/hub meetings, was generally good. In comparison, CPD leads' engagement with the middle leader training was lower, although 'churn' in staffing in participating schools may have masked higher levels of participation.

- There is evidence from both the surveys and the qualitative interviews that the project impacted on a number of outcomes including the degree to which professional development was tailored to the needs of individual teachers and support staff, and evaluated in participating schools. There is also evidence from the interviews to suggest that CPD leads had developed their knowledge and understanding of school-based processes and structures, and that some CPD leads had become more confident in leading professional development in their settings.

- Analysis of School Workforce Census (SWC) data suggests that there is, at present, no evidence that the project achieved its intended longer-term impacts on teacher retention and progression.

- The impacts on pupil outcomes were less clear, although there was qualitative evidence to suggest that the project could, in the longer term, contribute to the TLIF aim of improving pupil attainment.

- During the project, the person in the role of CPD lead changed in 18 of the 39 participating schools. This highlights the challenge of delivering multi-year improvement projects to schools in challenging circumstances. To ensure continuity and to maximise the impact of projects like this, additional safeguards to encourage continuity should be considered, such as the involvement of other individuals, in this case headteachers and other senior and middle leaders.

The findings from this report were drawn from baseline (n=35) and endpoint (n=16) surveys of CPD leads, telephone interviews with five EAs and the TDT Project Manager, and secondary data from the SWC. In addition, five school case studies were conducted (each comprising an interview with a CPD lead, senior leader, middle leader, and EA). DfE management information was also analysed.

Glossary of Terms

CPD lead – The person responsible for leading CPD activities in participating schools. Schools nominated a CPD lead for participation in the project. Some CPD leads were new in post, others had longer experience in this role.

Expert Adviser (EA) – Senior school leaders, seconded from their schools for two days per week to the project. EAs supported CPD leads with CPD planning and evaluation, provided fortnightly coaching conversations, and led half-termly local forums designed to share best practice around pre-identified CPD needs.

Ofsted judgement – Ofsted can reach one of four overall judgements about schools: 1) Outstanding; 2) Good; 3) Requires Improvement; and 4) Inadequate. Inadequate is further subdivided into two categories, serious weaknesses or requiring special measures.

Priority areas – Category 5 or 6 Achieving Excellence Areas (AEAs) Local Authority districts, including the 12 Government Opportunity Areas - areas identified as having weakest performance and least capacity to improve.

Priority schools – Term used by projects funded by the Teaching and Leadership Innovation Fund to describe schools with an Ofsted judgement of 3 or 4 (Inadequate or Requires Improvement (RI)).

TDT Network - A partnership of schools and colleges supporting evidence-informed professional learning, run by the Teacher Development Trust (TDT).

Teaching and Leadership Innovation Fund (**TLIF**) – DfE programme (2017-2020) aimed at improving pupil outcomes and supporting pupil social mobility by improving teaching and leadership in priority areas and schools through outcome-focused, evidence-based and innovative professional development provision.

The Teacher Development Trust (TDT) – The national charity for effective professional development in schools and colleges. TDT raises awareness of the importance of CPD, builds tools to help teachers transform their practice, and supports schools to achieve success for all their pupils. For more information visit: http://tdtrust.org/

1   About the TDT CPD Excellence Hubs Project and the evaluation

The Teacher Development Trust (TDT) Continuing Professional Development (CPD) Excellence Hubs TLIF Round 1 project[1] aimed to improve the leadership, culture, and structures/processes of CPD in schools. This whole-school project was designed to provide bespoke and sustainable support to schools for at least two years, running from January 2018 to March 2020. Through working directly with senior and middle leaders, the CPD Excellence Hubs project aimed to impact up to 1,500 teachers across participating Partner Schools. CPD leads were exposed to professional development opportunities, including:

- personalised guidance with CPD planning and evaluation;
- fortnightly coaching conversations; and
- half-termly attendance at local forums designed to share best practice around pre-identified CPD needs.

TDT worked with a CPD lead in each of 39 primary and secondary schools drawn from five areas: Blackpool; Northumberland; Sheffield; South-Central Hertfordshire and Stoke-on-Trent. Each area formed an 'Excellence Hub', led by an Expert Advisor (EA) from a Lead School. The EAs were senior leaders, seconded from their school for two days per week to the project. The Lead Schools, who had previously worked with TDT, were recruited by TDT to provide support through an Excellence Hub based on their understanding of the differences between effective and ineffective CPD. Participating schools received funding (the equivalent of a half-day per week) for the time and capacity necessary for the CPD lead to engage with Hub activities, as well as with the TDT Network[2], the national partnership of schools and colleges dedicated to effective, evidence-based professional learning.

1.1 Theory of Change

The TDT CPD Excellence Hubs Project had a number of intended outcomes and impacts. These are outlined in the project Theory of Change (ToC) in Appendix A. The ToC was created by the evaluation team, and reviewed by DfE. The logic model was based on the ToC submitted by the project as part of its bid; our understanding of the project's underlying rationale, activities, outputs and anticipated outcomes; and subsequent conversations with the project team. Intended outcomes included improvements in the

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[1] TLIF projects were commissioned over two rounds of funding. The TDT CPD Excellence Hubs programme was commissioned as part of Round 1.
[2] https://tdtrust.org/network

leadership of CPD in schools, while impacts included improvements in teacher retention and progression, pupil attainment and an increased demand for CPD. The theory underpinning these intended outcomes is that by improving senior leaders', middle leaders' and teachers' knowledge of effective CPD, and removing barriers to CPD, leadership in schools will improve, enabling the teacher- and pupil-level outcomes outlined above to be realised.

The methods (project activities/outputs) by which TDT expected to achieve the intended outcomes and impacts are also outlined in Appendix A. These included:

- auditing each school's approach to CPD every year (three times over the course of the project) and using the outcomes of the audit to inform the selection and setting of transformational priorities for the schools to work towards

- providing support and training for CPD leads in each school

- providing hub meetings (forums) as an environment for the exchange of learning between hub schools.

Evidence has shown that leadership of CPD in schools can be patchy (Ofsted, 2006, 2010; Opfer *et al.,* 2008), suggesting that more needs to be done to improve the leadership, culture, structure and processes of CPD in schools. TDT-commissioned research concluded that carefully designed teacher CPD with a strong focus on pupil outcomes can have a significant impact on pupil achievement (Cordingley *et al.,* 2015). Moreover, teachers report being more likely to stay in teaching as a result of better CPD and career development (Menzies *et al.,* 2015). Drawing on this evidence, the TDT CPD Excellence Hubs project aimed to leave a lasting legacy for participating schools in terms of improved quality of teaching, and improved senior and middle leader and teacher retention and progression.

1.2 Contextual factors

The TDT CPD Excellence Hubs project was one of ten DfE-funded TLIF projects. The DfE wished to test out how effectively a variety of different CPD approaches could meet project-specific and fund-level outcomes; therefore, each of the ten projects were commissioned to be intentionally different in design, scale, scope and delivery method. At fund level, the evaluation seeks to compare and contrast the relative effectiveness of these projects in meeting their stated aims and objectives – taking into account a range of factors related to their differences. These include:

- **impact focus and target group** (whether impact was intended to be at whole-school, individual-teacher level or both; and whether the project targeted leaders, teachers or both) – the TDT CPD Excellence Hubs project had a leadership focus and targeted school CPD leads.

- **phase supported** (whether primary, secondary, or both phases) – the TDT CPD Excellence Hubs project supported primary and secondary schools.

- **per-participant cost** (calculated by comparing the overall cost specified in the project's bid against the number of participants that the project was contracted to recruit[3]). Relative to the other TLIF projects, the TDT CPD Excellence Hubs project was high cost.

- **intensity of the delivery model** (categorised by creating a combined score incorporating: duration of provision offered (in months), hours of provision offered (per participant); and proportion of school staff that the project aimed to engage[4]). Relative to the other TLIF projects, the TDT CPD Excellence Hubs project had an intensive delivery model.

- **range of delivery modes** (categorised into two groups: a wide range (five to six modes), and a moderate range (three modes[5]). The TDT CPD Excellence Hubs project had a wide range of delivery modes relative to other TLIF projects.

In the Fund-level report, we take the TDT CPD Excellence Hubs project's contextual factors into account as we compare its progress in achieving outcomes with the progress made by the other TLIF projects.

1.3 Evaluation methodology

1.3.1 Overall evaluation methodology

The aim of the evaluation was to undertake a process and impact evaluation to explore indicators of effectiveness and to measure impacts (teacher retention and progression) and outcomes (including teaching and/or leadership quality – see Chapter 4, Table 2 for full details). The objective was to draw out learning and best practice, test out the project's ToC, and identify implications for the fund-level assessment, as well as educational policy and practice more broadly. Our original evaluation design also included an impact evaluation to assess the impacts of the project on pupil attainment. However, due to partial school closures as a result of the Covid-19 pandemic, and the cancellation of Key Stage 2 assessments and GCSE examinations for the 2020 cohort, DfE decided to remove this aspect of the evaluation. There will, therefore, no longer be a pupil impact analysis aspect to the evaluation.

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[3] High-cost projects had a relatively high per participant budget, medium-cost projects had a relatively medium per participant budget and low-cost projects had a relatively low per participant budget.
[4] We do not have dosage data – so this assessment is based on intention rather than actual involvement, but it provides an indication of the nature of delivery. Our three resulting categories were: 'intensive'; 'moderate' and 'light touch'.
[5] No projects had four modes of delivery and no projects had fewer than three.

1.3.2 Evaluation methodology for this report

This final evaluation report draws on secondary data from the School Workforce Census (SWC[6]), survey, and qualitative data. It provides a measure of the project's success in achieving the TLIF programme's impacts (SWC data), outcomes (survey and qualitative data) and project-specific outcomes (survey and qualitative data). SWC and survey findings are supported by rich qualitative data, which aids understanding of the recruitment, delivery and implementation factors that influenced achievement of these outcomes. The report explores the links between inputs, outcomes and impacts, analysing the appropriateness of the project's ToC in achieving desired results. The evaluation data sources available at the time of writing are outlined below:

1. a comparison of secondary data from the SWC for the TDT CPD Excellence Hubs project's participants, and for a matched group of non-project participants[7]. The TDT CPD Excellence Hubs participants were identified via project MI data, which was collected by DfE and shared with NFER.

2. a baseline survey of 40 CPD leads (one school subsequently dropped out of the project), which achieved responses from 35 (a response rate of 88 per cent) (March-July 2018). It should be noted that some of the whole-school CPD audits commenced before the CPD leads had completed the baseline questionnaire. As a result, it is possible that the project may already have started to have an effect prior to completion of the baseline questionnaire.

3. an endpoint survey of 58 CPD leads[8], which achieved responses from 16 (a response rate of 28 per cent) (March-May 2020). The endpoint survey was launched shortly before schools in England went into lockdown as a result of the Covid-19 pandemic. This necessitated a pause in planned reminder activity, and with schools focused on dealing with the pandemic, the result was that response rates were considerably lower than expected. For the matched analysis, a maximum of 14 responses were matched between the baseline and endpoint surveys. It is possible that those responding at endpoint were those that were more engaged.

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[6] This work was produced using statistical data from the Office for National Statistics (ONS). The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

[7] Non-project participants were defined as any school that was not enrolled on the TDT CPD Excellence Hubs project, irrespective of whether or not it was involved in another TLIF project. This is because some treatment group participants were also involved in more than one TLIF project.

[8] There was some 'churn' in the endpoint sample. One of the original 40 schools dropped out, because of changes to its leadership team, and in 18 of the remaining 39 schools, responsibility for the programme was passed to a different teacher, at some point between administration of the baseline and endpoint surveys. The endpoint survey was sent to all 58 participants, including the original 40 plus the 18 teachers who became their school's CPD lead sometime after the start of the programme.

4. three telephone interviews with the TDT CPD Excellence Hubs Project Manager (October 2018, October 2019 and April 2020)[9]

5. telephone interviews with five EAs (December 2018)[10]

6. telephone case-studies in five schools, involving interviews with five CPD leads, five EAs, five senior leaders[11] (a deputy headteacher or headteacher) and five middle leaders (a subject or phase leader) (November 2019-January 2020).

Each telephone interview was semi-structured and lasted for between 30-45 minutes. Interviews were recorded where interviewees gave permission, and were analysed using the qualitative analysis package MAXQDA. Further details on the approach to qualitative sampling, together with the selected characteristics of case-study CPD leads and their schools, can be found in Appendix B.

Factor analysis was used to explore the findings from the surveys. This was based on a matched analysis of respondents who answered at both baseline and endpoint. An analysis of the characteristics of all respondents who answered at baseline and endpoint, and how these compared to those in the matched analysis, can be found in Appendix E. Despite varying sample sizes across the baseline and endpoint surveys and matched analysis, the teacher- and school-level characteristics of CPD leads in each sample were broadly similar[12]. A description of the quantitative analyses undertaken on the survey data can be found in Appendix F.

Appendix C describes the methods used for matching MI data to SWC data, and for constructing a comparison group. Appendix D provides the results of the impact analysis. In summary, the steps were as follows:

1. The MI data was matched to the SWC on the basis of Teacher Reference Numbers (TRNs), names and dates of birth. This matched 100 per cent of the TDT CPD Excellence Hubs Project participants as recorded in the MI data with at least one record in the SWC.

2. Project participating schools were matched with non-participating schools using propensity score matching. Matching for the full sample occurred on the basis of school characteristics (school phase, Ofsted rating, etc. – see Appendix C for the full list)

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[9] Note that the post holder changed between the first two interviews.
[10] One EA went on maternity leave in the second year of the programme. The post was staffed by the TDT central team for the remainder of the programme.
[11] One CPD lead was also the school's headteacher, and was interviewed in both capacities.
[12] Compared to the baseline, there were proportionately fewer CPD leads with only one year of experience of leading CPD in the endpoint and matched analysis samples, although this is to be expected given respondents growing experience over the course of the programme.

observed in the baseline year, where baseline year was defined as the academic year that recruitment to the programme started.

3. The retention rates in state-sector teaching among teaching staff in the treatment and matched comparison schools were compared using a logistic regression model, one, two and three years after baseline and controlling for the variables used for matching. The same process was followed to estimate the impact on retention in the same school, retention in the same LA, retention in a challenging school, progression within the profession, progression in the same school, progression in the same LA and progression in a challenging school.

1.4 Focus of this report

This report focuses specifically on:

Section 2 – Recruitment and retention (whether the project met its targets for school and participant recruitment, and the factors that supported this).

Section 3 – Delivery and implementation (whether this progressed according to plan; what worked well and not so well; and what lessons can be learned for future CPD offers).

Section 4 – Outcomes and impacts of the provision (the extent to which the project met, or had the potential to meet, the TLIF programme's outcomes and impacts, and its own bespoke project outcomes).

Section 5 – Sustainability (discussion of the potential for sustainability of new ways of working, new learning and outcomes in schools, which have come about through involvement with the project).

Section 6 – Evaluation of the TDT CPD Excellence Hubs project Theory of Change.

Section 7 – Summary and indicative implications for policy and CPD development.

2 Recruitment

2.1 Progress towards recruitment targets

The original recruitment targets for TDT were to sign-up and work with 40 CPD leads drawn from 40 schools (including primary and secondary schools). However, owing to a school leaving the project because of a change to the senior leadership team, DfE agreed to a reduction in the minimum number of schools to 39. The schools were drawn from five areas: Blackpool; Northumberland; Sheffield; South-Central Hertfordshire and Stoke-on-Trent. All 39 schools (100 per cent) were required to be in priority areas (category 5 and 6 areas).

Management information (MI) submitted by TDT to the DfE in February 2020 can be found in Appendix G. The MI shows that TDT recruited 39 CPD leads from across 39 schools. However, the project did not quite meet its target for school recruitment in priority areas, with 97 per cent of recruited schools located in category 5 or 6 areas, against a target of 100 per cent.

Analysis of the following MI can be found in Appendix G:

- Total school and participant numbers
- Distribution of schools by phase
- Distribution of schools by region
- Distribution of schools by AEA Category
- Distribution of schools by Index of Multiple Deprivation Decile
- Teacher roles

2.1.1 What enables and hinders effective recruitment and retention?

EAs were responsible for recruiting schools to their hubs. They were given the flexibility to manage their own recruitment strategy, and to tailor it to what would work in local schools. Generally, EAs reported that once they were able to **talk to senior staff or CPD leads face-to-face** they were successful at signing up the school. EAs cited **the reputation of TDT, combined with the experience of the EA** as persuasive factors in engaging schools in the project. In particular, the fact that EAs were respected school senior leaders gave the support credibility and relevance, bolstered by access to other well-respected local education leaders. One EA felt that a **focus on local support** had been more effective at selling the project than when he had promoted it as a TDT-led product. Other facilitating factors included:

- the school in which the EA was based having a **strong reputation locally**, including an effective headteacher or other staff members

- one EA being based at a **Research School**

- describing the project as **collaborative or as school-to-school support**.

Building on initial recruitment through **word of mouth referrals** was also reported to have yielded success for at least one hub.

What hinders effective recruitment and retention?

In spite of TDT's success in initially recruiting 40 schools, the TDT Project Manager commented that **changes to senior staffing in supported schools had been an ongoing challenge**:

> At every stage of the project, EAs have been challenged by changes in school personnel. Where there have been changes in school leadership, EAs have been working hard to keep schools in the programme. Sometimes this has required small changes in focus in terms of the school improvement priorities that have been agreed.

This is illustrated by the fact that in 18 of the 39 schools the person with responsibility for leading CPD changed during the life of the project. Analysis of the responses from the 16 completed endpoint surveys confirmed that five of the respondents joined the project after it started. In two of these cases, this was due to a member of staff commencing, or returning from, maternity leave. In the other three it was due to either a member of staff leaving the school and the role needing to be reassigned, the head reassigning the role to a new member of staff, or a new headteacher joining the school and taking on the previous incumbent's role of CPD lead.

As highlighted above, TDT met their project-level target of recruiting 39 schools. However, the five hubs recruited different numbers of schools, and from different phases, as summarised in the table below.

Table 1 Number and type of schools recruited across the five hubs

Type of School	Blackpool	Northumberland	Sheffield*	South-Central Hertfordshire	Stoke-on-Trent	Total
All-through school	1	0	0	0	0	1
Primary	3	3	7	4	9	26
Secondary	4	6	2	1	0	13
Total number of schools	**8**	**9**	**9**	**5**	**9**	**40**

*One school subsequently dropped out from the Sheffield hub.

Although hubs/EAs did not have specific recruitment targets by phase, EAs explained that in a few cases, **secondary schools had been reluctant to work with an EA who was based in a primary school**. As a result, the successful sign ups in some areas had been skewed towards primary schools[13]. This is reflected in the MI (see Appendix G), which shows that 64 per cent of recruited schools were primaries[14]. There was limited information about why secondary schools were reluctant to work with primary-based EAs. Some EAs suggested that this could have been because secondary schools felt the primary context was substantially different to their own, and that, therefore, the potential benefits of participation in the project were perceived to be limited. In contrast, there did not appear to be a similar issue for EAs based in secondary schools, where recruitment of primary schools to the hubs was reported to have gone smoothly.

Some of the EAs were surprised at **how difficult it was to engage some schools with which they did not have a pre-existing relationship**. It is not clear to what extent EAs had to recruit outside of their existing networks, but EAs reported that cold-calling schools was quite difficult. However, where they were able to arrange to meet with the headteacher or other school staff, most EAs reported they were successful at gaining their commitment to the project.

The importance of **engaging with third party stakeholders**, particularly the Local Authority (LA) or school trust was highlighted by interviewees. The TDT Project Manager reported that, where the LA had not been consulted early on in the recruitment process, recruitment had been more difficult than it might otherwise have been, and, in one hub the

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[13] Of the five EAs, three were based in a primary school (Sheffield, South-Central Hertfordshire and Stoke-on-Trent), and two in a secondary school (Blackpool and Northumberland).
[14] This is based on the revised total of 39 schools, of which 25 were primaries.

LA actually dissuaded schools from taking part. In another hub one school that had agreed to take part was reported to have been over-ruled by their school trust. The reasons for this were not clear, but **these experiences highlight the importance of giving consideration to the role of LAs and school trusts when recruiting individual schools to improvement programmes.**

3 Delivery and implementation of learning

3.1 Progress in delivery

Delivery, which started in early 2018 and concluded at the end of March 2020, consisted of EAs supporting participating schools ('Partner Schools') in developing the culture, leadership and structures around CPD. It was delivered through a number of different strands of activity, described below.

3.1.1 Whole-school CPD audit

CPD leads' engagement with the whole-school audit process was reported to be very high. Interviewees' reported that the first audit helped establish a baseline of the strengths and weaknesses of the schools' CPD provision, with the second and third audits helping them to track the effectiveness of the improvements that had been introduced.

Participating schools completed a bespoke whole-school audit of their CPD processes in each year of the project, participating in three audits in total over the course of the project. The Project Manager described the **three-stage audit process** as a 'really powerful structure' to map out the journey for the schools working with the EAs. The audit, led by the EA, involved:

- online self-evaluation of the school's approach to CPD by a member of the senior leadership team

- a whole-school staff survey

- visits by the EA to interview school staff.

The audit was based around the seven sections of the TDT CPD Quality Framework (these being: culture and wellbeing; focus on learning and pedagogy; needs analysis and evaluation; internal support and challenge; use of expert knowledge; processes and structures of CPD; and research, innovation and evidence). Schools were awarded a bronze, silver or gold rating based on the audit, which was evidenced in a report by the EA. The reports also identified particular strengths and weaknesses, which, with the support of the EA, schools used to identify two key priorities for each year of the project. These were designed to have the maximum sustainable impact on improving the quality of staff development.

The first round of audits was completed in the first half of 2018. Initially, the EAs reported that it took a long time to complete the reviews and subsequent reports, but that this process became easier as their experience of the process grew. This view was supported

by two of the five CPD leads we interviewed, who felt the process could have been more streamlined. However, there was also a recognition that a thorough review process took time, and that schools wanted their staff to take the time necessary to engage meaningfully with it.

> The only downside for me has been the length of the audit… if you take into account the busy environment of the school, there is an argument to say it could have been a lot more streamlined. For example, there was repetition between [survey] questions.

> The length of the audit can be a bit much, but we provide time [for staff] to complete [it]. Staff might not give us such honest responses if they felt they were being rushed.

In April 2019, the Project Manager reported that 23 of 39 of the second audits had been completed; explaining: '[we] officially set ourselves [a] deadline of the Easter holidays, but this has been pushed back to end of June 2019 [because] some of the schools had not had a full year since receiving the last audit report'. At that point, the TDT Project Manager reported that, as a result of the second audits, all of the schools were judged to have improved in at least two out of the seven sections of the TDT CPD Quality Framework.

Analysis of our endpoint survey data suggests that CPD leads' engagement[15] with the whole-school CPD audit was very high, with all 16 respondents reporting they had accessed this support. Of these, two reported that the provision 'moderately' met their needs while 14 reported it had 'fully' met their needs (see Appendix H).

Despite the positive response from CPD leads, EAs reported that their **experiences of delivering the audits had been mixed**. Three (at least one of whom had prior experience of undertaking similar reviews or activities) felt that the process had been straightforward, although they reported that it had been necessary to send a number of reminders to schools before all the necessary tasks had been completed. Two found the process more difficult, because of the large amount of encouragement their schools needed to complete the process correctly. It should be remembered that participating schools were in challenging circumstances, and may, therefore, have had limited capacity to undertake the audit. This finding highlights the importance of each participating school's commitment to the project, and to the process of supporting teacher development.

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[15]Respondents answering the follow-up survey who reported they were involved in the different strands of the programme were asked to rate the extent to which it met their needs on a scale of 1 to 8 where 1 was 'Not at all' and 8 was 'fully'. The scale has subsequently been collapsed into four categories as follows: 1-2 ('Not at all'); 3-4 ('Somewhat'); 5-6 ('Moderately'); 7-8 ('Fully').

From their point of view, CPD leads reported that **implementation of the audit process had gone smoothly**, with schools ensuring that all their staff were given the opportunity to participate in the survey, and that a wide range of staff were represented in the follow-up interviews, as one CPD lead explained.

> We try and do as many interviews as possible. It's not [about] picking the people who will do well, [it's about undertaking] a proper view of the school. [For example], there's always an interview with an experienced teacher and an NQT. It's important to us to do that well so the EA can make a proper judgement in terms of where we are on our CPD journey.

All five of the CPD leads we spoke to reported that **the CPD audits had been useful**. The value of the first audit was said to be in establishing a baseline of the strengths and weaknesses of the schools' CPD provision, with the subsequent audits helping to track the effectiveness of the improvements that had been introduced.

> I really value the audit tool…in terms of it giving us something to work with and areas to focus on, highlighting areas to improve [and] areas that we have improved, it is pretty good

The first audit was described by one CPD lead as revealing some 'gaping holes' in their CPD provision, which, in their case, was a lack of training for support staff. However, the second audit was reported by the same respondent to show rapid progress, and the CPD lead reported that school staff had been eager to participate in conversations about how their CPD provision had already improved, and how it could improve further. Indeed, three of the five CPD leads shared with us the outcomes of the first two audits, with two schools moving from a bronze to silver rating, and the third narrowly missing out on silver. At the time of the case-study interviews, schools were about to start their third and final audit, or were midway through it.

Feedback from the EAs suggests that the **audit was successful in supporting schools to identify the priorities they needed to work on**. For some schools the report was said to make for 'difficult reading' but, on the whole, EAs felt that the outcomes of the audit had been received positively by participating schools. Examples of school priorities included: improving the monitoring and evaluation of CPD approaches; improving CPD provision for teaching assistants and support staff; introducing lesson study; moving CPD from being a one-off activity to an ongoing improvement activity; improving CPD networking with other schools; streamlining the number of CPD interventions; and identifying priorities specific to particular subjects or schools (for example CPD related to literacy).

3.1.2 Regular support and coaching for CPD leads by EAs

CPD leads' engagement with the coaching conversations was very high and the conversations were reported to be high-quality, useful, and worthwhile. The frequency with which these conversations took place reduced in Years 2 and 3 of the project, in response to the changing needs of participants and their requests for fewer interactions.

CPD leads were expected to take part in fortnightly coaching conversations with their EA to effectively implement the improvements identified in the whole-school CPD audit.

Rather than being viewed as an 'add on', the CPD leads reported that the coaching conversations quickly became part of their routines, and were reported by them to have been helpful in ensuring they kept on track with their schools' CPD improvement work. Analysis of our endpoint survey data suggests that CPD leads' engagement with the coaching conversations was very high, with 15 of the 16 respondents at endpoint reporting they had accessed this support. Of these 15, three reported that this support 'moderately' met their needs while 12 reported it had 'fully' met their needs (see Appendix H).

One CPD lead reported that they had found the coaching calls easier to commit to than the hub meetings, because they could be scheduled around their other commitments. Most CPD leads reported that they had earmarked a regular time every fortnight in which the calls could take place. This time was protected on their timetables. Despite this, on some occasions, the calls did not go ahead due to the CPD lead being called away to deal with other school matters. Where this happened, CPD leads reported that their EAs were very good at scheduling in an alternative date, or in picking up the discussion either through email, or at the end of one of the hub meetings.

Whilst most coaching conversations took place by telephone, some took place in person. One coach reported that the visits were more engaging, and helped to 'drive the process forward', but EAs acknowledged that it wasn't always possible to visit a school, particularly where the hub served a large geographical area, such as in Northumberland. It is perhaps worth noting that, in light of the Covid-19 pandemic, which emerged after these interviews were undertaken, remotely delivered coaching may now be preferred by participants over face-to-face visits, and may offer better promise in terms of both the sustainability and scalability of this model.

In the first year of the project the coaching sessions were scheduled fortnightly, however, moving into the second year, the EAs and schools felt that sometimes this was too frequent for an in-depth session as it did not allow sufficient time to implement or complete actions in between sessions. During the interviews in December 2018, the EAs said they had adapted their approach by making the contact 'lighter touch' and shorter. Examples were given of a reduced duration from one-hour calls at the start of the project to 15-20

minutes later on, which was felt to be sufficient to review progress and keep things moving. In April 2019, the TDT Project Manager confirmed that a reduction in the frequency of coaching conversations had been made in response to the feedback from EAs:

> The meetings are less directive and less frequent than they were in the earlier stages of the programme. But I think this is to be expected, and we need to allow time for CPD leads to make changes to their provision in-between the calls to the EAs.

3.1.3 Half-termly CPD leader forums/hub meetings

CPD leads' engagement with the half-termly forums was generally very high, with many choosing to attend with their headteacher (where relevant) or other senior leaders. The meetings were reported to be good places to network, share ideas and develop solutions to common problems.

Each EA ran CPD leader forums for their hub. The forums, which were run every half-term, were designed to allow local CPD leaders to come together and share intelligence, and collaborate around improving practice. The content was tailored to each hub according to the needs of the schools engaged, and this was informed by discussions with schools and responses on feedback forms. Some of the EAs reported that the hub meetings were an important mechanism for building and maintaining relationships with the schools. It was left to EAs to choose where the forums were held; they were usually at one of the hub schools. Two of the EAs reported that they rotated the location of the meetings around the hub schools – this was reported to have helped to increase Partner Schools' ownership of and engagement with the hub meetings.

EAs reported that attendance at the forums was generally good. As a minimum, the CPD lead for each school was required to attend the meetings, but headteachers and other staff were also encouraged to attend together with, or in place of, the CPD lead. Analysis of our endpoint survey data suggests that CPD leads' engagement with the forums was very high, with 15 of the 16 respondents reporting they had accessed this support. Of these 15, one reported this provision had 'somewhat' met their needs, three reported it had 'moderately' met their needs, and 11 reported it had 'fully' met their needs (see Appendix H). As reported above, some caution should be taken in interpreting these figures, due to the small underlying number of respondents. Some CPD leads interviewed by telephone reported that attendance could vary from one hub meeting to another, with one CPD lead reporting that 'sometimes only four out of five schools would attend'. In the second year of the project, some of the hubs were opened up to non-project participants, such as other local schools. It was suggested that by doing so, this brought in additional local expertise

and experience, while also helping to widen the number of schools that benefitted from the hub meetings.

Representatives from the DfE attended and observed four CPD Excellence Hub forum meetings in September 2018, and one in June 2019. Summaries of these events are included in the boxes below.[16] Two of the four September events were rated as 'excellent' (on a five-point Likert scale that ranged from 'Excellent' to 'Very poor') by the observers overall, while two were rated as 'satisfactory'. The June 2019 event was rated as 'excellent'.

CPD leader forums (September 2018)

Three members of the DfE TLIF contract team attended four hub events in total. As reported above, two of the four events were rated as 'excellent' by the observers overall, while two were rated as 'satisfactory'. In order to improve the satisfactory events, the observers suggested:

- It would have been helpful for the EA to set out at the beginning of the session what the aims, objectives and expected learning / development outcomes of the session were.

- It may have helped to briefly set out: what progress had been achieved to date, where the group were in terms of progress / expectations; and where they should be – aiming to get to by a certain point.

Participant feedback was gathered through speaking to participants informally and was mainly focussed on the project as a whole rather than the delivery of the individual event.

Views from participants revealed positive feedback about the project. Participants particularly liked how bespoke it was to individual schools and how the support offered was over a long period of time to enable the school time to change its culture.

Concerns were raised by DfE around the seniority of some of the CPD leads within their settings (not all were on their school's senior leadership team (SLT)) and how TDT were monitoring the time the CPD leads were spending on the project. In response, TDT reported they were confident that this was not a problem and that all Partner Schools had SLT buy in to enable the CPD lead to make effective change in their school. TDT suggested that rotating the location of the half-termly forum around the Partner Schools would further help with participant buy in and engagement.

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[16] We have augmented the observations received from DfE slightly where these were in note form.

CPD leader forum (June 2019)

The whole session covered quite a bit of ground and met the objectives set out for the session and - at that point of the journey - of the project. The dynamics in the room were challenging, with one head about to retire, because of a school amalgamation, and another moving on. This was a risk to the delivery of the project in this hub. The provider was aware of the context and put in extra effort with the new leaders in the schools. Responses in the discussions provided evidence that the project was improving the quality of leadership and the school generally.

All those present felt the project was improving the quality of the CPD in their schools and that the regular audits helped them to keep focused on the needs of the school. The biggest challenges [stated by attendees] were around the churn and the recruitment of sufficient staff and in terms of CPD cover when staff are out of school for training. The observer of this forum expressed some concerns about continuity of the project with changes in senior school staff and schools reported that they had many NQT staff, and that holding on to them after two or three years was not easy. It was suggested that some NQTs wanted to move back to where they came from, others wanted to go part time and, if they were specialist like a science teacher, they were sought after by a number of schools. Senior leaders reported they were spending quite a bit of their time 'firefighting' to keep enough appropriate staff in front of pupils. Therefore CPD, whilst valuable, is sometimes hard to deliver on. The session was well hosted in one of the local schools in the hub (hosted by rotation), which allowed participants to learn a bit about how other schools operated.

The five CPD leads interviewed reported that they had found the hub meetings useful fora in which to share ideas and experiences, and develop solutions to common problems. The networking opportunities these meetings brought about were reported to be both valuable and engaging, as illustrated by the quotations below:

> I've formed some really useful contacts across the town and also with the middle school, we are in contact outside of the hub as well, sharing ideas and resources. That has been a really good networking event.

> Being in a room with likeminded people who are passionate about CPD and getting the best from staff teams is great.

While the hub meetings were reported to be useful, two specific CPD leads reported that they did not regard them as the most useful strand of the project. It was unclear how the other CPD leads viewed the hub meetings when compared to the other strands of the project. One CPD lead attributed this to the fact that in their hub, 'there are a lot of

differences in terms of the staff and pupils in the schools', and that while some practices could be shared, this limited the value of the discussions. This may have been, because this was one of the hubs in which both primary and secondary schools took part. While the differences by school phase were not referred to directly by the CPD lead, it seems likely that this was the source of the differences referred to.

One CPD lead reported that their headteacher had taken the decision that all the members of the senior leadership team (SLT) would attend the hub meetings on a rotating basis, therefore helping to spread knowledge and understanding, with the aim of embedding learning within the SLT's practices. It is not clear how many schools took a similar approach, although both the CPD leads and EAs reported that many schools chose to send their headteacher and/or deputy headteacher, in addition to their CPD lead (where the roles were different).

3.1.4 Training on how to best support middle leaders via one of the CPD leader forums/hub meetings

CPD leads' engagement with the middle leader training appears to have been lower than with the other strands of the project, although the 'churn' in staffing in participating schools may mask higher levels of participation.

One of the aims of the TDT CPD Excellence Hubs project was to train CPD leads to ensure that the middle leaders within their settings (such as phase and subject leaders) played an important role in promoting and modelling effective CPD practices amongst their teams. This was born from an understanding that improvement in schools' CPD practices is too great a responsibility for one individual to shoulder alone, and also from the fact that middle leaders are well positioned to influence the experiences, attitudes and behaviours of their teams.

It was intended that one of the half-termly forums/hub meetings would be dedicated to discussing this topic. All but one of the five CPD leads interviewed by telephone reported they had attended such a meeting, and that they had found it helpful. Analysis of our endpoint survey data suggests that CPD leads' engagement with training for middle leaders was lower than that for the other strands of the project. Eleven of the 16 respondents reported they had accessed this support[17]. Of these, six reported this support 'moderately' met their needs, while five reported it had 'fully' met their needs (see Appendix H). For those who did participate, the training was reported to have led to improvements in schools' CPD operations, based on research that was presented and discussed at these meetings. These improvements are discussed in Section 4.3, but

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[17] As reported earlier, some of the CPD leads that completed the endpoint survey were not involved in the programme from the beginning. In these cases, it is possible that this training was attended by the person who previously held responsibility for leading CPD within their setting.

included middle leaders taking on greater responsibility for leading CPD within their teams and focusing departmental meetings on a discussion of teaching and learning outcomes.

3.1.5 Access to a portal/TDT platform with CPD resources

Our survey data suggests that 13 out of 16 CPD leads responding at endpoint accessed the project's online materials, although the extent to which CPD leads fully engaged with them was mixed.

As part of the national TDT network, participating schools were offered access to a range of online resources, tools and academic research. Analysis of the survey data suggests that engagement was lower than with some of the other strands of the programme, with 13 of the 16 respondents at endpoint reporting they had accessed this support. Of these 13, three reported that the provision 'moderately' met their needs while six reported it had 'fully' met their needs. However, three reported it had only 'somewhat' met their needs, while one reported their needs had 'not at all' been met (see Appendix H). One CPD lead reported their school had close links with a local Research School, who provided similar materials online, and suggested that this was the reason why these materials had not been accessed more extensively. The findings from the interviews suggest that engagement may have been even lower than suggested by the survey data, with only three of the five CPD leads we interviewed reporting they had accessed these online resources, and while these materials were reported to have been positively received, use of them was said to have been very limited. While the reasons for this comparatively mixed level of engagement are not entirely clear, CPD leads' high workloads, together with the fact that this self-study component of the project was not mandatory, appear to have been contributing factors.

3.1.6 Annual study visits to schools with exceptional CPD practice

While not part of the project's core offer, and so not explored through the endpoint surveys, one of the five CPD leads interviewed reported that they were in the process of setting up visits for themselves and their colleagues to two neighbouring schools that had been assessed as 'gold' against the TDT CPD Quality Framework. This opportunity was billed as a further opportunity to share and observe excellent CPD practice, and to facilitate local networking. It is not clear how widely these opportunities were made available to participating schools, although the other four CPD leads reported that, at the time of interview (November 2019-January 2020), they had not formally been invited to visit another school, beyond those visited as part of the half-termly forum meetings.

3.2 Progress in the implementation of learning

The TDT CPD Excellence Hubs Project provided structured school-level support for learning to be implemented through its provision. It did this by offering a tailored approach to the implementation of learning. This was led by the regular coaching conversations between CPD leads and EAs, and supported by a range of tools, resources and research to facilitate the transformation of their approach to CPD in school. CPD leads were supported and constructively challenged throughout the project by their EAs, and Partner Schools also received funding to give them more time and capacity to fully engage and develop professional learning opportunities.

The presence of headteachers and other senior school leaders alongside CPD leads (where responsibility for CPD was devolved to another member of staff) at forum meetings, **helped to ensure that conversations around improvement to CPD processes involved the schools' senior decision-makers, and helped to facilitate improvement.** Although this worked well, this did not appear to be a deliberate feature of the design of the project. EAs did, however, work hard to engage school senior leaders, both during recruitment to and delivery of the project.

As a whole-school intervention, designed to improve the leadership, culture and structures/processes of CPD in schools, **implementation was led by the schools themselves**, with much of the support tailored to their specific needs. A common approach adopted by our case-study schools was to implement a more consistent whole-school approach to CPD, whereby staff meetings now involved some form of discussion around professional development. As a result, professional development had become embedded within routine departmental discussions, rather than being viewed as a separate activity. As one CPD lead explained: 'It's a subtle change, but it has changed peoples' attitudes to professional development'. That is not to say that some degree of tailoring or adaptation was not required by schools, and CPD leads valued the implementation support provided by EAs, which was largely delivered through their regular coaching conversations. Further support for tailoring and implementation came through the hub meetings and networking opportunities with other school staff, which provided further exemplification, as one CPD lead explained:

> The project can't give us more CPD time, but what it has given us is examples of how other schools are doing it; how they are using CPD and how they have structured the school day to maximise the benefits from CPD.

3.3 Challenges and enablers in effective delivery and implementation of learning

Research participants reported experiencing a range of challenges and enablers to the effective delivery and implementation of learning. These are grouped under the headings below.

3.3.1 Factors related to the provider/provision

Central to successful delivery of the project was the **role of the EA**, which initially was, in all cases, undertaken by practicing teachers with direct, current experience of leadership in schools in the local area. The fact that experienced, local teachers delivered the project made it more attractive to participating schools, and arguably contributed to EAs being able to rapidly develop positive working relationships with the CPD leads and their colleagues.

One of the EAs felt that the **hub model** was particularly helpful in terms of encouraging schools to keep on track through the 'social pressure' of keeping up and not falling behind. CPD leads reported that the networking and school-to-school interactions had both helped them to remain engaged with the project, and to develop local solutions to common CPD problems.

The TDT CPD Excellence Hubs project **included a number of components that supported effective implementation of learning**. This process started with the whole-school CPD audit. This provided an evidence-based framework from which EAs could work with schools to identify key priorities and develop an action plan, which was bespoke to each setting. This was followed by intensive coaching support and hub-based peer-to-peer support, which, while resource intensive, was designed to embed improvements in the quality of staff development.

In terms of challenges in delivery, interviewees recognised that the project was quite **demanding in terms of the time commitment** required from Partner Schools, as the Project Manager explained:

> The demands of the project are quite high. We realise that. Keeping half-termly forum meetings – most schools thought these were at the right frequency, depending on the hub.

In addition, one of the EAs went on maternity leave in the second year of the project. The post was staffed by the TDT central team during the remainder of the project. The interview with a CPD lead in this hub suggested that this transition had been relatively smooth, largely because of the groundwork and progress that had already been made

while the EA had been around. However, as the two TDT staff who replaced the EA didn't work in schools, the subsequent support was reported to be useful, but not as valuable as that delivered by the EA. **This finding highlights the challenges of maintaining relationships between both school and delivery personnel during a project of this duration, but also the importance of replacing delivery staff with personnel with similar skills and experience where possible.**

3.3.2 Factors related to the school climate/context

Schools' exhibited a number of behaviours that supported effective delivery and implementation of learning. These included a willingness to: **secure SLT commitment** (e.g. in hub meetings), where they were not already the school's CPD lead, ensuring a whole-school commitment; and **to take the audit outcomes 'on the chin' and make practical changes as a result** (evidenced by the move from a lower to a higher rating on the TDT CPD Quality Framework). In addition, schools' rose to the challenge of **changing staff attitudes to CPD**, and, while difficult to do, there was evidence that CPD leads were attempting to support behaviour change. This will inevitably be a long-term endeavour, but the process had been kick-started by the project.

One of the greatest challenges facing schools was **finding time** - for staff to engage in professional development, and to a lesser extent, for the CPD lead to carry out their role. In some cases, this involved schools creating or moving dedicated time that was allocated for CPD. As far as possible, this time was protected and 'never cancelled for something else'. In other cases, CPD leads and senior leaders reported it was about changing staff attitudes and behaviours to CPD so that, where time was available, it was used more productively, for example by ensuring that learning from CPD was put into practice in the classroom and shared with others. However, there was no single solution to this, and most schools still appeared to be wrestling with this challenge.

Related to this, EAs reported that having protected time to work on the project allowed them to build relationships and trust with the schools they were supporting. However, **the way in which EAs' time was allocated to the project by their host school affected the way they were able to engage with it**. One EA, interviewed in December 2018, reported that they had been appointed to the project after their timetable in school had been set for that year. Their timetable only allowed parcels of time throughout the week, making it difficult for them to fit the work around their pre-scheduled teaching commitments. However, in line with the other EAs, at the start of the following academic year, the EA was able to set aside two full days for this work, which was reported to be much more manageable and productive.

CPD leads reported that **communicating the value of CPD** as something that could improve outcomes for pupils, was one way of getting staff buy in. Another was involving

staff in the direction that schools were taking, and encouraging them to take greater responsibility for their own development, as one CPD lead explained:

> Involving teachers has been really important. With any change in culture it is important not just to lead from the top down, you need to involve people in that so they buy into the process.

However, **changing staff attitudes to CPD was reported to be challenging**, particularly where staff were on different career paths, as some felt there was limited opportunity for progression.

4   Outcomes and impacts of the provision

This section considers the extent to which the TDT CPD Excellence Hubs project achieved its intended project outcomes (see Appendix A and Table 2). It draws on survey data to report changes from baseline to endpoint on a number of measures and secondary analysis of SWC data to report changes in teacher retention and progression. These findings are supported by qualitative data, which adds insight into different stakeholders' perceptions of the outcomes of the project, and provides context for the interpretation of outcomes.

The analysis of impacts utilises a comparison group design. This enables us to estimate the counterfactual, and infer whether or not changes in teacher retention and progression might have come about in the absence of the TDT CPD Excellence Hubs project. However, we did not adopt a comparison group design for the survey. We measured changes between baseline and endpoint in participants' views and experiences. This means that, while we can show an association between the project and observed outcomes, we cannot provide evidence to support a causal link. It is possible that any reported outcomes might still have come about in the absence of the project.

4.1   Context for interpretation of outcomes

Although we have attempted to collect comparable fund-level outcome data for all TLIF projects, in practice the projects' intentions, with regard to achieving these outcomes, differed. The TDT CPD Excellence Hubs project attempted to achieve most of the Fund-level outcomes, but not reduced exclusions/improved pupil attendance. This should be borne in mind when interpreting the outcomes reported below.

4.2   Context for interpretation of impacts

It should be remembered that while the TDT CPD Excellence Hubs project was a whole-school initiative, it was designed to impact indirectly on teacher retention and progression by improving senior leaders', middle leaders' and teachers' knowledge of effective CPD, and by removing barriers to CPD. It is possible that it could take several years before the full impacts of the project in these areas can be measured.

4.3   Observed outcomes

In this section we use a statistical technique called factor analysis that summarises information from a number of items asked in both the baseline and endpoint surveys into a smaller set of reliable outcome measures. By exploring whether there are statistically

significant changes in the mean scores of these factors between baseline and endpoint[18], we can explore whether the CPD Excellence Hubs project has had an impact on participating schools. This allows for a more robust and straightforward analysis than comparing single items from the surveys. The factor analysis is based on a matched analysis of the same respondents who answered at both baseline and endpoint. In instances where individual survey items were deemed to be particularly noteworthy, these are reported separately. Due to the relatively small underlying number of respondents in the matched analysis, it has not been possible to undertake subgroup analysis (for example to explore any variations in impact by phase), and some caution should be exercised in interpreting the findings. Further information about how the factors were constructed can be found in Appendix F.

The survey findings are supplemented with the findings from qualitative interviews with CPD leads, their senior leaders, middle leaders and EAs, and the TDT Project Manager. These explored respondents' perceptions of the outcomes of involvement in the project on different stakeholder groups (CPD lead participants, other school staff and pupils) and on the wider school. We have extrapolated from both the qualitative and quantitative data to illustrate where there are indications of Fund-level outcomes having been achieved, or not.

4.4 TLIF and bespoke project outcomes and impacts

The tables below detail the outcomes (most of which we expect to see earlier i.e. within a year of project involvement) and impacts (which take longer to realise) that the TDT CPD Excellence Hubs project intended to achieve. Outcomes and impacts are grouped together for each of the intended beneficiaries of the project: senior leaders; middle leaders; schools; and pupils.

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[18] Results were considered statistically significant if the probability of a result occurring by chance was less than five per cent ($p = < 0.05$).

Table 2 Intended project outcomes for senior leaders (CPD leads)

Theme	Outcome or impact
Knowledge of effective CPD processes and structures, CPD conditions required in schools and effective features of CPD delivery	Outcome
Improved relationships with other schools	Outcome
Changes in practice in terms of CPD processes, priorities and plans and delivery	Outcome
Level of satisfaction with teaching	Outcome
Motivation/likelihood to stay in profession	Outcome

Table 3 Intended project outcomes for middle leaders

Theme	Outcome or impact
Understanding and knowledge of how effective CPD should be designed, structured, commissioned and led	Outcome
Understanding of the culture needed for CPD to succeed	Outcome
Changes in CPD delivery	Outcome

Table 4 Intended project outcomes and impacts for schools

Theme	Outcome or impact
Leadership of CPD, structures and processes, culture of and engagement with CPD	Outcome
Satisfaction with CPD	Outcome
Impacts of CPD on classroom practice	Outcome
Continued demand for CPD (sustainable change)	Outcome
Continued availability of high-quality CPD and capacity to deliver within schools (sustainable change)	Outcome
Teachers' satisfaction and motivation for teaching	Outcome
Improved staff retention	Impact
Improved teacher/middle leader/senior leader progression and achievement of NPQs	Impact

Table 5 Intended project impacts for pupils

Theme	Outcome or impact
Increased pupil attainment at Key Stage 2 and GCSE	Impact
Improved pupil social mobility via exploring the attainment of pupils eligible for free school meals (comparing the attainment of pupils in intervention schools to comparison group schools)	Impact

The following sections reflect on these outcomes thematically, and draw on factor analysis, which was conducted in two stages. First, it was conducted on the core question items that were asked of all respondents in exactly the same way. This resulted in Factors 1 to 4 (see Appendix F) for all respondents. Second, it was conducted on core question items that covered consistent themes, but where the wording, or the inclusion, of items varied slightly

depending on the role of the respondent (class teachers, middle leaders, or senior leaders). This resulted in Factors 13 and 14 for senior leaders (see Appendix F). The TDT CPD Excellence Hubs project included questions for classroom teachers, middle leaders, and senior leaders, although given respondents' status as CPD leads, most of the respondents fell into the category of senior leaders. A detailed description of the factor analysis undertaken can be found in Appendix F. Insights from the interviews with project participants, non-participants and the TDT Project Manager are summarised alongside those from the quantitative data.

4.4.1 CPD leads' views on key outcomes related to the aims of the TDT CPD Excellence Hubs project

The baseline and endpoint surveys included questions/items that directly related to the aims of the TDT CPD Excellence Hubs project. CPD leads were asked to rate a series of items on a scale of one to eight, where one was 'Strongly Disagree' and eight was 'Strongly Agree'. The responses were then converted into a point score, with 'Strongly Disagree' being worth -4.0 points, and 'Strongly Agree' +4.0 points. A mean score was then calculated, and compared between baseline and endpoint. From these items, three factors were created. These cover the extent to which:

- schools explicitly tailored professional development to the needs of individual teachers and support staff

- a range of approaches were used to evaluate the effectiveness of professional development

- barriers to leading professional development had been overcome.

A description of the items that make up these factors can be found in Appendix F. The findings from these factors, together with the findings from four individual items from the questionnaires (see Appendix I) can be found in Table 6 below. Table 6 also highlights the range of results[19] that were possible between baseline and endpoint, as well as where there was a statistically significant change in the findings between baseline and endpoint.

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[19] For factors, the range of the scores is determined by the number of items in the factor. For example a factor that is made up of eight items (such as 'Barriers to leading professional development'), has a range of -32 to +32.

Table 6 CPD leads' views on key outcomes related to the aims of the TDT CPD Excellence Hubs project

Factors	Range: Minimum	Range: Maximum	Mean Score: Baseline	Mean Score: Endpoint	Change	N*	Statistically significant change (p = < 0.05)
Extent to which school explicitly tailored professional development to needs of individual teachers and support staff	-12	12	0	3	+3	14	Yes (positive)
Extent to which a range of approaches were used to evaluate the effectiveness of professional development	-12	12	-3	2	+5	14	Yes (positive)
Barriers to leading professional development	-32	32	9	0	-9[20]	14	No
Individual items in the baseline and endpoint questionnaires	**Range: Minimum**	**Range: Maximum**	**Mean Score: Baseline**	**Mean Score: Endpoint**	**Change**	**N***	**Statistically significant change (p = < 0.05)**
To what extent does your school evaluate the impact of professional development?	-4	4	-1	1	+2	14	Yes (positive)
I have knowledge/understanding of what effective professional development looks like	-4	4	2	4	+2	14	Yes (positive)
I have knowledge/understanding of school-based processes and structures that can maximise the benefits of professional development for all staff	-4	4	1	3	+2	14	Yes (positive)
How confident do you feel about leading professional development in your school?	-4	4	2	3	+1	14	No

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[20] While the negative number here indicates that the extent of the barriers reduced, the finding is not statistically significant, as although the magnitude of the number is large compared to other factors, this should be taken in context with the larger range for this factor.

Means are rounded to the nearest whole number. *The N refers to the number of schools included within the analysis, rather than the number of CPD leads. Given that some schools made changes to the staff allocated to the role of CPD lead during the project (see Section 1.3), in some cases the CPD lead responding at endpoint was not the same person who responded at baseline.

It is notable that there were significant positive changes in the factors and items related to CPD leads' assessments of the degree to which **professional development was now tailored to the needs of individual teachers and support staff,** and in the extent to which participating schools now **evaluated the impact of professional development.** CPD leads' responses to the surveys also suggested that schools had increased the **range of approaches used to support evaluation.** In addition, there were significant changes in the proportion of CPD leads who reported they **understood what effective professional development looked like**, and in the proportion who reported they **had knowledge of school-based processes and structures that can maximise the benefits of professional development.** These were positive findings, and provided evidence in support of the project's ToC. However, the findings also reveal no significant change in some other key outcome measures. A brief discussion of the qualitative findings, which in some cases help to shed light on the findings from the surveys, and in others present a different picture to them, follows in the sections below.

Tailoring of professional development to the needs of individual staff

As confirmed by the survey findings, CPD leads, when interviewed, reported that in setting professional development targets, schools were giving consideration to individuals' goals, as well as departmental and institutional priorities. In addition, schools reported they had moved to align professional development opportunities to their performance management systems, thereby ensuring that professional development was tailored to and discussed in relation to the needs of individual staff.

Evaluation of professional development

The survey findings suggest that by the end of the project, schools were more routinely evaluating the impact of professional development, and using a greater range of methods to do this, such as through monitoring teachers' views of their individual professional development experiences, staff job satisfaction, and the impact on budgets. However, these findings could not be fully substantiated by the qualitative interviews, as there were very few references to schools evaluating the impacts of professional development. There were four notable exceptions: two senior leaders reported that every CPD session was evaluated, with one explaining this was done through the use of an online form; and two EAs referred to schools implementing a 'model' or 'cycle' of CPD, which included evaluation. As many of the resources used by the EAs were developed by or in partnership with the TDT central team, and made available to all EAs, it seems likely that the other three EAs would have been following similar models with their schools. This would suggest that most, if not all schools would have been supported to evaluate their CPD.

Knowledge and understanding of effective CPD

In line with the positive findings regarding the tailoring and evaluation of CPD, there were also significant changes in the survey items related to CPD leads' self-reported knowledge or understanding of school-based CPD processes and structures. This was in keeping with the qualitative data. Indeed, all five of the CPD leads interviewed reported that both the fortnightly coaching conversations with their EAs and the half-termly forum meetings had been helpful in **widening their knowledge of effective CPD processes and structures,** and in encouraging reflection on the effectiveness, or otherwise, of existing school practices, as illustrated by the quotation below:

> The detailed conversations we've been having at the forum meetings have helped widen our bank of resources, our perspective of what works in other schools and why. It has also encouraged us to reflect on what may not have worked in our school and how that can be adapted.

Further evidence of CPD leads' growing knowledge and understanding of effective CPD can be found in the fact that only 18 out of 35 respondents to the baseline survey reported they were aware of the 2016 Standard for Teachers' Professional Development, which equates to 51 per cent[21]. By endpoint, this proportion had increased to nine out of 12 respondents (82 per cent) (see Appendix I). Similarly, between the two waves of the survey, the proportion of CPD leads who were aware of the standard and had implemented it in their settings had increased from seven out of 18 (39 per cent) to nine out of nine (100 per cent).

There was also a significant change between the baseline and endpoint surveys in CPD leads' self-reported knowledge of school-based processes and structures that can maximise the benefits of professional development. This is important to the sustainability of the project, and accords with the other survey and case-study findings described above.

Barriers to leading professional development

The survey findings suggest that there had been a reduction between the baseline and endpoint surveys in the extent to which CPD leads experienced barriers to leading professional development within their settings. However, this change was not statistically significant, which means it could have happened by chance. The findings from the interviews with CPD leads broadly support that CPD leads had experienced a reduction in barriers, but suggest that while some progress had been made, not all barriers had been

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[21] The standard sets out how to achieve effective professional development and was created to help schools identify good practice and raise expectations among teachers and schools. It was produced by the Teachers' Professional Development Expert Group in 2016.

entirely overcome. For example, staff were reported to hold more positive views on the value of training and development, and whole-school processes were being reformed to support wider engagement with professional development. However, other barriers, such as those posed by budgetary limitations as well as time and workload issues appeared more persistent and intractable.

Confidence to lead professional development

The survey findings suggest that while there was a modest improvement in CPD leads' self-reported confidence to lead professional development, this change was not statistically significant. However, the interviews with CPD leads presented a more positive picture, with all five reporting they had grown in confidence in their roles. Indeed, one CPD lead reported that they were now sufficiently confident to try new approaches, 'even if I don't get it right the first time'. Another took confidence from the progress that was being evidenced in the whole-school CPD audits as 'reassurance that I am doing the right thing'. It is worth noting that 13 per cent of those CPD leads who responded to the endpoint survey had more than ten years' experience of leading CPD in their settings, while 19 per cent had less than one year's experience (see Appendix E). It seems likely, although it is unproven, that those individuals with less experience of leading CPD may have gained the most confidence from the project. Any detectable improvements in confidence might, therefore, be diluted by the inclusion of the more experienced participants in the project.

4.4.2 Findings related to fund-level goals – outcomes

In addition to the factors and individual questions/items that directly related to the aims of the TDT CPD Excellence Hubs project discussed above, cross-cutting Fund-level factors were also created to explore the extent to which the project contributed to Fund-level goals. As with the factors reported above, CPD leads were asked to rate a series of items on a scale of one to eight, where one was 'Strongly Disagree' and eight was 'Strongly Agree'. The responses were then converted into a point score, with 'Strongly Disagree' being worth -4.0 points, and 'Strongly Agree' +4.0 points. A mean score was then calculated, and compared between baseline and endpoint. The approach was repeated for the other factors in this section. For a full description of the analyses undertaken, please see Appendix F. A summary of the findings from the factor analysis is detailed in the table below. The table also highlights where there was a statistically significant change in the findings between baseline and endpoint.

Table 7 Findings from the factor analysis

Factors	Range: Minimum	Range: Maximum	Mean Score: Baseline	Mean Score: Endpoint	Change	N*	Statistically significant change (p = < 0.05)
School teaching quality	-28	28	7	11	+4	14	Yes (positive)
Effectiveness of school leadership	-52	52	24	38	+14	14	Yes (positive)
Effectiveness of school culture	-24	24	9	15	+6	14	No
Effectiveness of professional development	-28	28	14	18	+4	14	No
Motivation for professional development	-8	8	8	7	-1	14	No
Opportunities for career progression	-8	8	3	1	-2	14	No

Means are rounded to the nearest whole number.

*The N refers to the number of schools included within the analysis, rather than the number of CPD leads. Given that some schools made changes to the staff allocated to the role of CPD lead during the project (see Section 1.3), in some cases the CPD lead responding at endpoint was not the same person who responded at baseline.

There were significant changes in the factors related to CPD leads' assessments of **school teaching quality** and **the effectiveness of school leadership.** These were positive findings, and provided evidence in support of the project's ToC. However, there were no significant changes in the factors related to CPD leads' perceptions of improvements in **the effectiveness of school culture and professional development, nor in CPD leads' motivations to engage in professional development, or in their perceptions of opportunities for career progression.** A brief discussion of some of the qualitative findings, which helps to shed some light on the findings from the factor analysis, follows in the sections below.

School teaching quality

The findings from the case-study interviews with CPD leads, mentors and senior leaders supported the findings from the surveys that participation in the project had resulted in improvements in school teaching quality. One senior leader, for example, mentioned the impact that observing practice in another school had had on teachers' pedagogy:

> All of the departments have said to me that working with that other school has opened their eyes to making some relatively minor tweaks to their own pedagogy, which has led to major improvements [in teaching].

As a result, staff in this school were requesting visits to other schools. EAs agreed that participation in the project had resulted in staff engaging in '*more conversations around pedagogy*'. Case study interviewees also reported that teachers had become more inspired and motivated in their teaching:

> There is a lot more talk and excitement amongst teachers to talk about teaching. - *Senior leader*

> Following CPD, people are more upbeat and positive about the introduction of new methods or new schemes of work. When staff return, they are buzzing about ideas that have been shared and you see this in the classroom. - *Middle leader*

EAs, senior and middle leaders also mentioned improved subject knowledge among staff:

> There is quite a lot of subject knowledge enhancement that goes on within departments now. - *EA*

> There are more people who have been on various courses, they are more empowered, they understand their subject more, or the area in which they are leading the school, so they have more confidence. - *Middle leader*

One EA commented that there was a particular project focus in some schools on subject-specific CPD, including reading/phonics, maths, science, PE and RE. Middle leaders also reflected that CPD had focused more on teaching and learning, which was visible in classrooms:

We do a lot more about teaching styles, and have discussions about research. [There is] now much more focus on teaching and learning, research inspired practices, trialling new things. - *Middle leader*

The new model of CPD is we will trial something, have an introduction to it, go and try it in the classroom, modify it, change it, do it again, discuss and any follow up monitoring/evaluation is carried out, so there is more joined up thinking. - *Middle leader*

You can see that what has been done in CPDL [continuing professional development and learning]… going into classes informally, you can see it is being embedded. - *Middle leader*

Effectiveness of school leadership

The findings from the survey suggest that there had been a statistically significant improvement in CPD leads' self-reported assessment of the effectiveness of school leadership. The factor from which this finding is taken included a number of different items, some, but not all of which, related to the leadership of CPD. There was a general consensus across EAs that the knowledge and confidence of the CPD leads had increased over the course of the project (as reported above), and that this had resulted in CPD being better managed and led in schools. Comments from the advisers (and one senior leader) included:

There is a sense of confidence in the work *[the CPD lead]* is doing and from what I can see, she is very engaged with the project, enjoys the work, and has gone above and beyond to involve herself in opportunities within the TDT network. Her confidence has increased.

The project has really upskilled *[the CPD lead]*. Increased her confidence. She's much happier with what she is doing, very confident about the direction they are heading in. *[She is]* now less hesitant to review/reconsider things, which might not be working as well, try new things.

She feels more confident to use research, to be more assertive with colleagues around what she expects from them in sessions and what their professional behaviour should look like.

[There have been] changes in the quality of leadership of CPD. [The CPD lead] has led it with great enthusiasm, great clarity and I think that has led to people buying into it. - *Senior leader*

In some cases, the CPD lead had disseminated their learning across other schools within a trust, thereby impacting on CPD practice in other schools, as this senior leader explained: 'he [the CPD lead] has been able to spread that [learning] across a big academy trust… he has been able to bring design of CPD structures and evaluation of effective CPD [into the trust].'

There was also evidence that middle leaders were taking greater responsibility for leading CPD within their teams, as illustrated by these quotes from a senior and middle leader:

> More staff lead CPD…Year leaders have higher expectations in terms of accountability for them to lead [CPD]. Year leaders have become like managers so there has been a shift in their role. - *Senior leader*

> People are now looking at how they will implement what happens in continuing professional development and professional learning in their own directorates. Everything being done has a purpose and can be taken back to departments to improve results in the departments. - *Middle leader*

In addition, there was evidence that CPD leads were delegating more to middle leaders. For example, middle leaders would look at gaps between intended curriculum and implemented curriculum and seek training for staff on how to fill the gaps. One EA also reported that middle leaders in one of their schools were enrolled on a leadership project being delivered by a national CPD provider.

Some staff had been given the opportunity to lead CPD in other schools. One middle leader said, *'several members of staff who have become experts on something have done that'.*

However, the extent to which the project had strengthened school leadership in the broader sense (i.e. not specifically in relation to CPD), was less clear. As reported above, the findings from the survey suggest that there had been a statistically significant improvement in CPD leads' self-reported assessment of the effectiveness of school leadership. However, the qualitative interviews suggested that improvements were attributed largely to the leadership of CPD, rather than school leadership in general. Despite this, one middle leader reported that there had been wider improvements in the quality of school leadership, and another noted that the project had made all staff activity '*more purposeful*'.

Effectiveness of school culture

The survey findings suggest that, during the life of the project, there was a modest improvement in CPD leads' perceptions of the wider school culture, albeit not a significant one. The findings from the telephone interviews with EAs and senior and middle leaders were even more positive; most felt that involvement in the project had improved school culture in respect of approaches to CPD. As reported earlier, there were relatively few respondents to the endpoint survey, which means that the matched survey responses may not necessarily reflect the perspectives of all those who responded at baseline.

One middle leader described the changed culture in their school as one of '*knowledge enrichment*', while an EA reported that schools now had a '*climate of professional learning*'. Rather than CPD being '*scattergun*' and seen as just '*going on a course*', it was now given more priority, and was more closely linked to school priorities (including Ofsted recommendations) and performance management arrangements. One EA noted that CPD is 'central to school improvement', but used to be seen as an 'extra that was done occasionally'. Other comments included:

> Over the last 2 years, a lot of work has been done to realign the school CPD with what the school needed. - *Senior leader*

> CPD was scattergun, didn't happen regularly, and lacked focus. Now, what is delivered to staff is relevant and to meet priorities and overcome issues, based on what works in the classrooms. - *Senior leader*

> CPDL [Continuing Professional Development and Learning] didn't have the priority, it wasn't seen as something that is massively important, it didn't link with the school's priorities, it wasn't necessarily linked to what staff needed. Now, it is very structured, planned out, it fits with what staff needs are. - *Middle leader*

> There has been a change in culture around teachers' engagement with professional learning. - *EA*

> There has been a real change in culture of how the senior leaders promote CPD and model their own professional development. - *EA*

In some of the interviews, CPD was thought to be more coherent across the school. As one middle leader said:

> There is now a structure, coherence. There is more joined up thinking. [There is a] CPD action plan, a model to implement CPD, which is followed. Most staff have a shared vision of what CPD looks like now. Meetings are thought out, there is a real clear purpose, it's linked to the school improvement plan really well. - *Middle leader*

In addition, there was evidence that some CPD leads had developed a more 'long-term view' of CPD. One EA described CPD as 'infused' into what schools now do. CPD was now reported to be more directly linked to the needs of the school and individuals. Staff were now expected to be more proactive and to take ownership of their CPD.

> There has been a change in ethos from a passive approach to a proactive process. – *Senior leader*

Some interviewees also reported that schools' approaches to CPD were now more research- and evidence-based:

> [There is] more research behind what we are doing. Previously, we weren't told about the research or knowledge underpinning strategies. Now that is there, it gives it more importance. - *Middle leader*

Effectiveness of professional development

Again, the survey findings suggest that there was no significant change in CPD leads' assessments of the effectiveness of the professional development they had personally undertaken between the start and the end of the project. This is hard to explain, especially given the positive feedback about the project that was received from the five CPD leads that we interviewed. However, it is clear that CPD leads already had a fairly positive view of the effectiveness of their professional development at baseline, as indicated by a mean score of 14 [out of a possible range of -28 to +28 points]. It is possible that the small sample numbers at endpoint may have also masked improvements experienced by other project participants.

Motivation for professional development

CPD leads were already highly motivated at baseline, as indicated by a mean score of eight, which was the maximum possible. Therefore, it was statistically impossible to detect a significant improvement in CPD leads' motivations to engage in professional development. The qualitative interviews confirmed that CPD leads were already highly motivated at the beginning of the project, but there was evidence that teaching staff in participating schools had become more positive about professional development. For example, at the start of the project, senior leaders and middle leaders reported that they

had to persuade some staff that changes to CPD were positive and beneficial, and had to '*dispel myths*' about what CPD looks like in practice, but that this changed over time:

> Some staff can be a bit harder to engage and accept the change in culture, but once they get into it they realise the benefits of it. - *Middle leader*

> People have changed their view of what CPD is. They don't think of it anymore as just a training course. There has been a tangible change in staff understanding of what CPD looks like. - *Senior leader*

Because of the changes brought about by the project – e.g. CPD becoming more tailored to the needs of individuals and departments and the greater alignment of CPD to performance management systems - teaching staff recognised that it was beneficial for them and consequently their motivation to participate increased.

Opportunities for career progression

The survey findings suggest that, between the start and the end of the project, there was no significant change in CPD leads' assessment of their opportunities for progression into senior system leadership positions, such as national or specialist leaders of education. It should be noted that while improved senior and middle leader and teacher progression was a long term goal of the project, this was not a key aim. However, there was evidence to suggest the project had equipped CPD leads with new skills and knowledge, and in some cases given them greater visibility within their settings or trusts. These findings are discussed in the section below, alongside the findings from the analysis of SWC data into the impact of the project on whole-school teacher retention and progression.

4.4.3 Findings related to fund-level goals – impacts

This section explores the extent to which the TDT CPD Excellence Hubs project achieved its impacts. It measures the impact of the project on teacher retention and progression. It also explores participants' perceptions of the impact of the project on teacher retention and progression and on pupil outcomes.

Retention and progression analysis

By linking the MI data supplied by DfE with SWC data, we compared teacher retention and progression rates of all staff within the schools participating in the TDT CPD Excellence Hubs Project with a comparison group of schools. We used the matched comparison

group to analyse difference-in-differences[22] using regression models with school and teacher levels. Teacher retention or progression was used as the outcome variable. Co-variates from the SWC included age, experience, and full-time equivalence, plus school characteristics such as phase, FSM band, attainment band, Ofsted rating and year indicators, as well as identifiers of treatment/comparison school.

For both the teacher retention and progression measures, we wanted to explore whether there were statistically significant differences between treatment and comparison schools:

- within the profession as a whole
- within the school they were in initially
- within the same local authority (LA) district
- within 'challenging schools' (i.e. schools that had an Ofsted rating 3/4 but which were not in a priority area (category 5/6)).

The findings are presented in the sections below.

Teacher retention

The tables below summarise the TDT CPD Excellence Hubs project's impacts across the four retention measures analysed.

Retention in the state-funded sector in England

Table 8 Difference in retention in state-funded teaching in England

Retention Measure	Treatment group	Comparison group	Difference	Difference-in-difference	Statistically significant?
Estimated retention rate in state-funded teaching 2 years before baseline (2015 to 2016)	91.9	90.0	1.9	-	-
Estimated retention rate in state-funded teaching 1 year before	92.6	90.1	2.5	-	-

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[22] The difference-in-difference analysis statistically compares each 'post-baseline treatment vs. comparison group difference' to the 'average pre-baseline treatment vs. comparison group difference'. For example, in Table 8, the treatment group retention is 2.2 percentage points higher than comparison group before baseline and 1.4 percentage points higher two years after baseline, so the diff-in-diff for that row is -0.9 percentage points (this figure is rounded). This analysis aims to mitigate any pre-intervention differences that still exist between treatment and comparison groups after matching.

Retention Measure	Treatment group	Comparison group	Difference	Difference-in-difference	Statistically significant?
baseline (2016 to 2017)					
Estimated retention rate in state-funded teaching 1 year after baseline (2017 to 2018)	93.0	90.5	2.5	0.3	No
Estimated retention rate in state-funded teaching 2 years after baseline (2018 to 2019)	92.5	91.1	1.4	-0.9	No
Estimated retention rate in state-funded teaching 3 years after baseline (2019 to 2020)	95.2	91.7	3.5	1.3	No
Number of schools	39	390	-	-	-

Note: Estimated retention rates are the average predicted retention rates from a logistic mixed-effects regression model for treatment and comparison schools, controlling for observed characteristics. The difference in average predicted retention rates is the marginal effect. Statistical significance of these differences is assessed at the five per cent level. Due to rounding, some estimated marginal effects may not exactly equal the difference between treatment and comparison schools.

The analysis in Table 8 reveals no statistically significant findings. This suggests that any differences in retention rates between treatment and comparison schools could have happened by chance. The findings suggest that the project did not lead to a significant change in the proportion of teachers being retained in state-funded teaching in England relative to those in the comparison group of schools.

Retention in the school

Table 9 Difference in rate of retention in the school

Retention Measure	Treatment group	Comparison group	Difference	Difference-in-difference	Statistically significant?
Estimated retention rate in the same school 2 years before baseline (2015 to 2016)	93.7	92.0	1.7	-	-
Estimated retention rate in the same school 1 year before baseline (2016 to 2017)	95.0	93.5	1.5	-	-
Estimated retention rate in the same school 1 year after baseline (2017 to 2018)	91.4	92.4	-1.0	-2.7	Yes
Estimated retention rate in the same school 2 years after baseline (2018 to 2019)	94.0	92.6	1.4	-0.3	No
Estimated retention rate in the same school 3 years after baseline (2019 to 2020)	96.4	94.8	1.6	0.0	No
Number of schools	38	384	-	-	-

Note: Estimated retention rates are the average predicted retention rates from a logistic mixed-effects regression model for treatment and comparison schools, controlling for observed characteristics. The difference in average predicted retention rates is the marginal effect. Statistical significance of these differences is assessed at the five per cent level. Due to rounding, some estimated marginal effects may not exactly equal the difference between treatment and comparison schools.

The analysis shown in Table 9 reveals one statistically significant finding. The difference between treatment and comparison schools one year after baseline was significantly

smaller than it was before the project started. Before the project, treatment schools had higher retention rates in the same school than comparison schools by about 1.6 percentage points. One year after baseline, teachers in treatment schools were one percentage point less likely to remain in the same school than teachers in comparison schools. The difference was caused by a notable reduction in the retention rate in treatment schools in this year (rather than the difference being caused by an increase in teacher retention within comparison schools).

Retention in the same LA

Table 10 Difference in rate of retention in the same LA

Retention Measure	Treatment group	Comparison group	Difference	Difference-in-difference	Statistically significant?
Estimated retention rate in the same LA 2 years before baseline (2015 to 2016)	96.7	94.7	2.0	-	-
Estimated retention rate in the same LA 1 year before baseline (2016 to 2017)	97.5	95.5	2.0	-	-
Estimated retention rate in the same LA 1 year after baseline (2017 to 2018)	95.2	94.9	0.2	-1.8	Yes
Estimated retention rate in the same LA 2 years after baseline (2018 to 2019)	96.1	94.9	1.2	-0.8	No
Estimated retention rate in the same LA 3 years after baseline (2019 to 2020)	98.0	96.5	1.6	-0.4	No
Number of schools	38	384	-	-	-

Note: Estimated retention rates are the average predicted retention rates from a logistic mixed-effects regression model for treatment and comparison schools, controlling for observed characteristics. The difference in average predicted retention rates is the marginal effect. Statistical significance of these differences is

assessed at the five per cent level. Due to rounding, some estimated marginal effects may not exactly equal the difference between treatment and comparison schools.

As in Table 9, the analysis shown in Table 10 reveals one statistically significant finding. The difference between treatment and comparison schools one year after baseline was significantly smaller than it was before the project started. Before the project, treatment schools had higher retention rates in the same LA than comparison schools by about two percentage points. One year after baseline, teachers in treatment schools were only 0.2 percentage points more likely to remain in the same LA than teachers in comparison schools. The difference was caused by a notable reduction in the retention rate in treatment schools in this year (rather than the difference being caused by an increase in comparison schools).

Retention in challenging schools

Table 11 Difference in rate of retention in challenging schools[23]

Retention Measure	Treatment group	Comparison group	Difference	Difference-in-difference	Statistically significant?
Estimated retention rate in challenging schools 2 years before baseline (2015 to 2016)	96.1	94.7	1.4	-	-
Estimated retention rate in challenging schools 1 year before baseline (2016 to 2017)	97.1	96.0	1.1	-	-
Estimated retention rate in challenging schools 1 year after baseline (2017 to 2018)	94.6	95.3	-0.7	-1.9	Yes
Estimated retention rate in challenging schools 2 years after	95.8	95.5	0.3	-1.0	No

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[23] For the purposes of this analysis, challenging schools are defined as schools rated by Ofsted as 'requires improvement' or 'inadequate'. A teacher is defined as remaining in a challenging school if they either stay within the same school, or they moved to a different school which was rated 'requires improvement' or 'inadequate'.

Retention Measure	Treatment group	Comparison group	Difference	Difference-in-difference	Statistically significant?
baseline (2018 to 2019)					
Estimated retention rate in challenging schools 3 years after baseline (2019 to 2020)	97.7	97.0	0.7	-0.6	No
Number of schools	39	390	-	-	-

Note: Estimated retention rates are the average predicted retention rates from a logistic mixed-effects regression model for treatment and comparison schools, controlling for observed characteristics. The difference in average predicted retention rates is the marginal effect. Statistical significance of these differences is assessed at the five per cent level. Due to rounding, some estimated marginal effects may not exactly equal the difference between treatment and comparison schools.

As with the tables above, the analysis shown in Table 11 reveals one statistically significant finding. The difference between treatment and comparison schools one year after baseline was significantly smaller than it was before the project started. Before the project, treatment schools had higher retention rates in challenging schools than comparison schools by about 1.25 percentage points. One year after baseline, teachers in treatment schools were 0.7 percentage points less likely to remain in challenging schools than teachers in comparison schools. The difference was caused by a notable reduction in the retention rate in treatment schools in this year (rather than the difference being caused by an increase in the retention rate in comparison schools).

Collectively, the retention findings suggest an initial negative impact of the project, although this did not appear to last. Compared to the period before the project started, there were statistically significant reductions in the rate of retention in: 1) the same school one year after baseline; 2) the same LA one year after baseline; and 3) challenging schools one year after baseline. It is not clear why the project would lead to negative impacts in this specific year. It is possible that, for teachers in the treatment group, the year following baseline might have been a period for seeking new opportunities elsewhere, particularly given that retention rates were comparatively high in the two years prior to baseline.

Teacher progression

The tables below summarise the TDT CPD Excellence Hubs project's impacts across the four progression measures analysed.

Progression in the state-funded sector in England

Table 12 Difference in progression in state-funded teaching in England

Progression Measure	Treatment group	Comparison group	Difference	Difference-in-difference	Statistically significant?
Estimated progression rate in state-funded teaching 2 years before baseline (2015 to 2016)	4.6	4.2	0.4	-	-
Estimated progression rate in state-funded teaching 1 year before baseline (2016 to 2017)	4.0	4.1	-0.1	-	-
Estimated progression rate in state-funded teaching 1 year after baseline (2017 to 2018)	2.9	3.2	-0.4	-0.5	No
Estimated progression rate in state-funded teaching 2 years after baseline (2018 to 2019)	2.2	3.5	-1.3	-1.5	Yes
Estimated progression rate in state-funded teaching 3 years after baseline (2019 to 2020)	2.7	2.8	-0.1	-0.2	No
Number of schools	39	388	-	-	-

Note: Estimated progression rates are the average predicted progression rates from a logistic mixed-effects regression model for treatment and comparison schools, controlling for observed characteristics. The differ-

ence in average predicted progression rates is the marginal effect. Statistical significance of these differences is assessed at the five per cent level. Due to rounding, some estimated marginal effects may not exactly equal the difference between treatment and comparison schools.

The analysis shown in Table 12 reveals one statistically significant finding. The difference between treatment and comparison schools two years after baseline (i.e. in the last year of the project) was significantly different than it was before the project started. Before the project, treatment schools had higher progression rates than comparison schools by about 0.15 percentage points. Two years after baseline, teachers in treatment schools were 1.3 percentage points less likely to progress in state-funded teaching than teachers in comparison schools.

Progression in the school

Table 13 Difference in rate of progression in the school

Progression Measure	Treatment group	Comparison group	Difference	Difference-in-difference	Statistically significant?
Estimated progression rate in the same school 2 years before baseline (2015 to 2016)	4.6	3.5	1.1	-	-
Estimated progression rate in the same school 1 year before baseline (2016 to 2017)	3.7	3.4	0.3	-	-
Estimated progression rate in the same school 1 year after baseline (2017 to 2018)	2.8	2.6	0.2	-0.5	No
Estimated progression rate in the same school 2 years after baseline (2018 to 2019)	2.1	2.9	-0.7	-1.4	Yes
Estimated progression rate in the same school 3 years after	2.5	2.2	0.3	-0.4	No

Progression Measure	Treatment group	Comparison group	Difference	Difference-in-difference	Statistically significant?
baseline (2019 to 2020)					
Number of schools	39	385	-	-	-

Note: Estimated progression rates are the average predicted progression rates from a logistic mixed-effects regression model for treatment and comparison schools, controlling for observed characteristics. The difference in average predicted progression rates is the marginal effect. Statistical significance of these differences is assessed at the five per cent level. Due to rounding, some estimated marginal effects may not exactly equal the difference between treatment and comparison schools.

As with the table above, the analysis shown in Table 13 reveals one statistically significant finding. The difference between treatment and comparison schools two years after baseline (i.e. in the second year of the project) was significantly different than it was before the project started. Before the project, treatment schools had higher progression rates than comparison schools by about 0.7 percentage points. Two years after baseline, teachers in treatment schools were 0.7 percentage points less likely to progress in the same school than teachers in comparison schools. We can see from the table that the difference was caused by a notable decrease in the progression rate in treatment schools in this year, relative to the rates before baseline.

Progression in the same LA

Table 14 Difference in rate of progression in the same LA

Progression Measure	Treatment group	Comparison group	Difference	Difference-in-difference	Statistically significant?
Estimated progression rate in the same LA 2 years before baseline (2015 to 2016)	4.5	3.7	0.8	-	-
Estimated progression rate in the same LA 1 year before baseline (2016 to 2017)	3.8	3.6	0.2	-	-
Estimated progression rate in the same LA 1 year after baseline (2017 to 2018)	2.8	2.8	0.0	-0.5	No
Estimated progression rate in the same LA 2 years after baseline (2018 to 2019)	2.2	3.0	-0.8	-1.3	Yes
Estimated progression rate in the same LA 3 years after baseline (2019 to 2020)	2.6	2.4	0.1	-0.4	No
Number of schools	39	388	-	-	-

Note: Estimated progression rates are the average predicted progression rates from a logistic mixed-effects regression model for treatment and comparison schools, controlling for observed characteristics. The difference in average predicted progression rates is the marginal effect. Statistical significance of these differences is assessed at the five per cent level. Due to rounding, some estimated marginal effects may not exactly equal the difference between treatment and comparison schools.

As with the tables above, the analysis shown in Table 14 reveals one statistically significant finding. The difference between treatment and comparison schools two years after baseline (i.e. in the last year of the project) was significantly different than it was before the project started. Before the project, treatment schools had higher progression rates than comparison schools by about 0.5 percentage points. Two years after baseline, teachers in treatment schools were 0.8 percentage points less likely to progress in the same LA than teachers in comparison schools.

Progression in challenging schools

Table 15 Difference in rate of progression in challenging schools[24]

Progression Measure	Treatment group	Comparison group	Difference	Difference-in-difference	Statistically significant?
Estimated progression rate in challenging schools 2 years before baseline (2015 to 2016)	4.9	3.8	1.1	-	-
Estimated rate of progression in challenging schools 1 year before baseline (2016 to 2017)	3.9	3.8	0.1	-	-
Estimated progression rate in challenging schools 1 year after baseline (2017 to 2018)	2.8	2.8	0.0	-0.6	No
Estimated progression rate in challenging schools 2 years after baseline (2018 to 2019)	2.2	3.1	-0.9	-1.5	Yes
Estimated progression rate in challenging schools 3 years after baseline (2019 to 2020)	2.7	2.4	0.3	-0.3	No
Number of schools	39	386			

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[24] For the purposes of this analysis, challenging schools are defined as schools rated by Ofsted as 'requires improvement' or 'inadequate'. A teacher is defined as progressing in a challenging school if they move to a middle/senior leadership position from a classroom teaching position or a senior leadership position from a middle leadership or classroom teaching position *and* stay within the same school or move to a different challenging school.

Note: Estimated progression rates are the average predicted progression rates from a logistic mixed-effects regression model for treatment and comparison schools, controlling for observed characteristics. The difference in average predicted progression rates is the marginal effect. Statistical significance of these differences is assessed at the five per cent level. Due to rounding, some estimated marginal effects may not exactly equal the difference between treatment and comparison schools.

As with the tables above, the analysis shown in Table 15 reveals one statistically significant finding. The difference between treatment and comparison schools two years after baseline (i.e. in the last year of the project) was significantly different than it was before the project started. Before the project, treatment schools had higher progression rates than comparison schools by about 0.6 percentage points. Two years after baseline, teachers in treatment schools were 0.9 percentage points less likely to progress in challenging schools than teachers in comparison schools.

Collectively, the progression findings suggest a negative impact of the project, although these impacts do not appear to have lasted for more than one year. Compared to the period before the project started, there were statistically significant reductions in the rate of progression, two years after baseline in: 1) state-funded teaching in England; 2) the same school; 3) the same LA; and 4) challenging schools. It is not clear why the project would lead to negative impacts in this specific year. It is possible that rather than seeking progression opportunities within the same school, staff in treatment schools sought promotion in other schools. Alternatively, for schools in the treatment group, the years following baseline might have been a period of consolidation and stability, particularly given that within-school progression rates were comparatively high in the two years prior to baseline.

Interpretation of retention and progression findings

These impact findings present a less positive picture than those suggested by the qualitative findings. For example, several of the CPD leads reported that the recruitment and retention of staff in their schools was an ongoing challenge, but one that they hoped the project would help address, as illustrated by this quotation:

> Retention and recruitment is a big issue for our school, but we feel that developing our culture around investment in staff has been really important, and we're already finding that… staff are more positive about the school.

Another CPD lead, whose school had recently been upgraded to 'Good' by Ofsted, and who attributed part of this improvement to participation in the project, thought this would encourage other members of the senior leadership team to stay at the school:

> You could say it has retained people that haven't left in the SLT, because they feel there is still work to do, still a project that's going on.

We are investing in their CPD, we are investing in their future. You
could argue that is part of the case.

However, there was no clear evidence, from either the survey or telephone interviews, to
suggest that CPD leads were more likely to remain in the profession as a result of the
project, as most reported they were already committed to staying at the start of the project.
The SWC analysis suggests that, compared to the period before the project started, there
were statistically significant reductions in both the rates of retention and progression in
treatment schools relative to those in the comparison group in the first two years.

Perceived impacts on pupils

While we were not able to measure the impact of the project on pupil outcomes, our
qualitative findings suggest that the project had the scope to influence, and in some cases
may already have been influencing, pupil outcomes. EAs and CPD leads referred to
positive changes in outcomes for pupils across their schools (including results at Year 11,
progress in reading and writing, and general progress across the curriculum), but found it
difficult to attribute these impacts directly to the TDT CPD Excellence Hubs project. This
was made harder by the fact that many of the participating schools were involved in other
initiatives. As one EA explained: 'It is hard to correlate'.

However, senior leaders felt that the CPD received by teachers had contributed to
improved attainment outcomes for pupils. For example, one senior leader reported that
maths attainment in Year 11 had 'improved exponentially in 2019' and felt the training staff
had received since joining the project had definitely helped. Another senior leader said that
GCSE and A Level results had improved in 2019, which was likely to be for a number of
reasons, including involvement in the project:

> [We are] definitely seeing outcomes at key stage 4 and 5, which would
> back up that the quality of education the kids are getting has improved
> over the last 3 years.

Another senior leader said the project had 'absolutely' had an impact on pupil outcomes.
The project helped them to put in place teacher training to help the progress of Year 6
pupils. By the summer, the year group was said to have progressed from below, to well
above, national averages in all subjects. Staff could see the impact of training on results:

> The school trajectory has gone up very rapidly so that has been really
> positive in terms of staff confidence and staff morale. *Senior leader*

One senior leader also commented on the impact of the project on pupil attitudes, because
teachers had received CPD on managing pupil behaviour. Similarly, two middle leaders

referred to an impact on pupil engagement in their learning, because staff had received CPD on how to engage a class. For example:

> Using the 'no opt out' approach…encourages students, if you ask them a question and they say 'I don't know', you can't just leave it there. It's using different techniques in order to get them to an answer whether it is assistance from another student, or summarising what another student said. - *Middle leader*

> The children feel they are being challenged and work harder and the subjects are more in depth and also there is more push for children to be actively involved in the lessons rather than passive learners. - *Middle leader*

As one middle leader summarised, 'We are investing for the children. If we are investing in the staff using the [project] structure and support, we will see an improvement in the children's outcomes'. Collectively, these findings provide an early and tentative indication that the TDT CPD Excellence Hubs project could, in the longer term, contribute to the TLIF aim of improving pupil attainment.

4.4.4 Findings related to fund-level goals – wider outcomes

It should be noted that not all of the TLIF's wider outcomes/impacts have been identified as intended impacts by all projects. For example, the TDT CPD Excellence Hubs project was designed to ultimately lead to improvements in teacher retention and progression and improved pupil attainment (through improved quality of teaching and leadership brought about by evidence-informed professional learning). It was not, however, designed to lead to improvements in pupil attendance/reduced exclusions, or improved school Ofsted ratings. Therefore, there is no data to report on these areas.

4.5   Interpretation of outcomes and impacts

Overall, there are signs that the project has had a considerable degree of success in achieving its anticipated outcomes. For example, there is evidence from both the surveys and the qualitative interviews that the project impacted on the degree to which professional development was tailored to the needs of individual teachers and support staff, and in the extent to which the impact of professional development was evaluated in participating schools. There is also evidence from the surveys and the qualitative interviews to suggest that CPD leads had developed their knowledge and understanding of school-based processes and structures designed to maximise the benefits of professional development for staff, and qualitative evidence that some CPD leads had become more confident in

leading professional development in their settings. There is also some evidence that teaching quality had improved, and that middle leaders had taken greater responsibility for leading CPD within their teams.

However, in terms of achieving its impacts, SWC analysis found that, compared to the period before the project started, there were statistically significant reductions in the rates of retention and progression in treatment schools, relative to those in the comparison group. Impacts on pupil outcomes are less clear, although there is qualitative evidence to suggest that the project could, in the longer term, contribute to the TLIF aim of improving pupil attainment. The EAs played a central role in the successful delivery of the project, and through their perseverance, they kept the project on track (for example by rescheduling missed coaching sessions with the CPD leads). Their professionalism and deep knowledge of processes and systems that support professional learning was valued by the CPD leads and their colleagues.

5 Sustainability

As part of the evaluation of the TDT CPD Excellence Hubs project we were interested in the sustainability of the new ways of working, new learning and outcomes in schools, which came about through CPD leads' involvement with the project. For their part, the CPD leads we spoke to certainly felt that they would be able to use, and had embedded, the approaches gained through the project:

> We came from such a low starting point, I'm really happy with our progress as a school, but I know we will continue to use that framework and use the experience to move forward.

> We've tried really hard to build a sustainable model and it is a model that if I were to leave or someone else was, it would sustain.

> We knew it was a two-year project and wanted to make sure that anything we started would continue on…This is something that needs to happen with our CPD. We would do something well for a year then when the focus wasn't on it, it would stop, so we're making sure this carries on.

However, there was also an acknowledgement that without further funding, some of the project elements, such as the local hub meetings, and even the additional time allocated to the CPD lead, might be reduced or removed altogether.

> If there is no funding attributed to attending the forums the turn out won't be as great as there isn't the same accountability.

> I would like to keep the CPD lead title but I'm unsure if the second afternoon out of class will still be granted, especially as we get closer to the end of year examinations.

Another potential limiting factor was the high turnover in the staff given the responsibility for leading CPD during the project. In 18 of the 39 participating schools, responsibility for the project was passed to a different teacher, at some point between administration of the baseline and endpoint surveys. It is possible that this limited the impacts of the project, and the degree to which schools were able to build sustainable processes and systems for their professional learning. However, we have no direct evidence of this, and there were other safe-guards in place. These included the fact that headteachers and other senior leaders were also encouraged to attend the half-termly forums, thereby developing their own knowledge and understanding, and the fact that the schools had built up the capacity

of middle leaders to support the development of more effective CPD processes. Collectively, these developments suggest there is reason to be hopeful that these new approaches have, or will, become embedded within participating schools.

6 Evaluation of the TDT CPD Excellence Hubs project Theory of Change

As outlined above, the qualitative and survey data suggests that the project was largely successful in achieving its intended outcomes. Although there was no evidence from the SWC analysis to suggest that the project achieved its intended impacts on retention and progression, there was qualitative evidence to suggest that the project could, in the longer term, contribute to the TLIF aim of improving pupil attainment. However, in order to evaluate the ToC, it is important to also consider the activities and target outputs, and whether these were delivered as expected (see Appendix A). For the most part they were, with both survey and qualitative evidence suggesting there was generally good fidelity to each of the main strands of the project. Crucially, there was evidence to suggest that most of the key outcomes were achieved, such as improvements in CPD leads' knowledge of effective CPD processes and structures, and in middle leaders' understanding of, and role in, delivering effective CPD. In addition, the TDT CPD Quality Framework supported schools to regularly evaluate and review their progress through the use of a high-quality audit.

Given that the project did not achieve its intended impacts on teacher retention and progression, at least in the timeframe of this evaluation, it is difficult to fully validate the ToC. In addition, it appears that some barriers to staff accessing CPD, such as those posed by budgetary limitations as well as staff time and workload issues, appeared to persist, and had not been entirely overcome. However, the work of the EAs should be singled out as playing a central role in the successful delivery of the project, and it is clear that many schools experienced a number of benefits from the project, most notably the degree to which professional development became tailored to the needs of individual teachers and support staff.

7 Learning about effective CPD for schools in challenging circumstances

7.1 Recruiting and engaging schools

This project has demonstrated that there is demand for specialist support to enable schools to build sustainable processes and systems for their professional learning.

As highly respected senior leaders, with a deep understanding of effective approaches to delivering CPD, EAs played a crucial role in both recruiting schools to the project, and then in supporting them to develop their culture, leadership and structures around CPD.

Early recruitment challenges highlighted the importance of giving consideration to the role of LAs and school trusts when recruiting individual schools to improvement programmes. In addition, some secondary schools were reported to have been reluctant to work with an EA who was based in a primary school. EAs suggested that this could have been because secondary schools felt the primary context was substantially different to their own, and that, therefore, the potential benefits of participation in the project were perceived to be limited. Should this project, or something like it, ever be scaled-up or delivered again, this, and the optimum composition of the hubs, is something that should be revisited.

Finally, it should be noted that during the life of the project, the role of the CPD lead changed in 18 of the 39 participating schools. This presented a challenge to TDT and the EAs in keeping schools in the project, but it also underscores the challenge of delivering multi-year improvement programmes to schools in challenging circumstances, particularly where those programmes are focused on working with a specific individual. Additional safeguards, such as the involvement of other individuals, in this case headteachers and other senior and middle leaders, should be considered to encourage continuity and to maximise impact.

7.2 Characteristics of effective CPD

Coe (2020) drew together a list of practical implications for the design of CPD. Although his review focussed on subject-specific CPD, it was based on the broad congruence of evidence found in reviews about the characteristics of effective CPD both within a subject-specific and wider context. These characteristics support changes in teachers' classroom practice, which, in turn, are likely to lead to substantive gains in student learning. These are set out in Appendix J. The first purpose of this section is to highlight key features of the TDT CPD Excellence Hubs project, which appeared to lead to positive outcomes indicative of effective CPD that align with Coe's list. The second is to identify any key features of the

project that appeared to lead to positive outcomes indicative of effective CPD, which are not included in Coe's list.

As an evidence-based intervention, it is perhaps not surprising that the TDT CPD Excellence Hubs project shared many of the components that Coe (2020) identifies regarding CPD that are most likely to lead to substantive gains in pupils' learning. For example, the intensive five-term/2-3 year project involving telephone, online and face-to-face components provided both the duration and frequency to enable learning to become embedded. The half-termly forums provided an opportunity for participants to share new ideas, knowledge, research evidence and practices, reflect on those ideas and discuss how they had been put into practice. CPD targets were aligned to both individual and organisational/departmental priorities. In addition, the TDT CPD Quality Framework was an effective tool for schools to regularly evaluate and review their progress, and supported a high-quality audit process.

The use of EAs provided CPD leads with an element of challenge, while also creating a safe space in which CPD leads could discuss, develop and implement new approaches and reflect on their effectiveness. Engagement with these strands of the project was generally good, although the project-level evidence is limited given that endpoint surveys were curtailed due to Covid-19.

As a whole-school intervention, the project was also able to shape local school CPD culture and processes. However, the evidence from the qualitative interviews and surveys on the extent to which this extended to broader measures, such as the quality of school leadership, was mixed.

7.3 Summary

Overall, the qualitative and survey data suggests that the project was largely successful in achieving its intended outcomes. While schools were not evenly distributed across the five hubs, the recruitment of 40 schools (which later dropped to 39) should be regarded as a success. There was evidence from both the surveys and the qualitative interviews that the project impacted on the degree to which professional development was tailored to the needs of individual teachers and support staff, and in the extent to which the impact of professional development was evaluated in participating schools. There was also survey and qualitative evidence that CPD leads had developed their knowledge and understanding of school-based processes and structures designed to maximise the benefits of professional development for staff, and qualitative evidence to suggest that some CPD leads had become more confident in leading professional development in their settings. There was also some qualitative evidence that teaching quality had improved, and that middle leaders were taking greater responsibility for leading CPD within their

teams. However, there was no evidence of the project achieving its intended impacts on teacher retention and progression.

One potential limiting factor was the high turnover in the staff assigned to the role of CPD lead. This finding highlights the severe structural challenges faced by schools in challenging circumstances, and the risks associated with building multi-year improvement programmes around one school-based role. To ensure sustainability and to maximise impact, additional safeguards, such as the involvement of other individuals, should be considered when designing future programmes of this type.

8 References

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Appendix A: TDT CPD Excellence Hubs project Theory of Change

Rationale and Evidence: Carefully designed teacher CPD with a strong focus on pupil outcomes can have a significant impact on pupil achievement (Cordingley *et al.*, 2015). Moreover, teachers report being more likely to stay in teaching as a result of better CPD and career development (Menzies *et al.*, 2015). Despite this, the leadership of CPD in schools can be patchy (Ofsted, 2006, 2010; Opfer *et al.*, 2008), suggesting that more needs to be done to improve the leadership, culture, structure and processes of CPD in schools.

Project activities

- Training day for Expert Advisers (EAs).
- Fortnightly support/ coaching for CPD lead in schools from their EA.
- Regional CPD Leader Forum (half-termly meetings) for CPD leads.
- EA training to CPD leads (via one of the CPD Leaders half-termly forums)
- Annual study visits to schools with exceptional CPD practice.
- Access to portal with CPD resources (support, events, training, conferences).

Outputs

- 40 schools (a mix of primary and secondary) recruited across five regional hubs.
- 95% of teachers in participating schools complete staff survey.
- SLT complete audit.
- Audit/ qualitative evidence demonstrates progress to priorities.
- Schools identify 2-3 priorities each year.
- 80% attendance at half-termly Forums.
- Evidence from training to middle leaders.
- Termly CPD mapping of provision v needs by EAs.
- Records of commissioned CPD.

Outcomes

Senior leaders e.g.

- Improvements in senior leaders' knowledge of:
  - i) effective CPD processes and structures
  - ii) the conditions required for CPD to flourish
  - iii) the effective features of CPD delivery.
- Barriers to accessing CPD removed.
- A 'better, tailored, local and sustainable CPD offer' is available.
- Increased satisfaction with CPD and motivation for teaching.

Teachers and middle leaders e.g.:

- Positive changes in middle leaders' understanding and knowledge of:
  - i) how effective CPD should be designed, structured, commissioned and led
  - ii) the culture needed for it to succeed.
- Barriers to accessing CPD removed.
- A 'better, tailored, local and sustainable CPD offer' is available.
- Increased satisfaction with CPD and motivation for teaching.

Schools e.g.:

- Improvements in CPD leadership.
- Improvements in CPD culture.
- Improvements in CPD structures and processes.
- Improvements in classroom practice.

Impacts: Schools

- Improved senior and middle leader and teacher retention and progression.
- Improved leader and teacher quality.
- Increased pupil attainment.
- Improved social mobility.
- Increased capacity to deliver CPD.
- Increased demand for CPD.

Impacts: System

- Improved CPD offer (quality/ availability).
- Increased demand for CPD.
- Improved evidence-base on 'what works' in leadership development and teacher CPD.

Contextual issues
- Specific needs of individual schools and participants: Prior knowledge, experience, beliefs and attitudes of participants.
- School readiness and capacity for change.

Appendix B: Qualitative sampling

Selection of school case studies

In order to capture a range of different perspectives/ 'cases' of the impact of the project we undertook five school telephone case studies, each focusing on a different Partner School (those in Ofsted category 3 or 4 and in DfE-identified category 5 and 6 Local Area Districts). The case studies were built around the participation of the CPD lead.

In November 2019 we emailed approximately half of the participating schools (~20), and asked for the CPD lead's help in setting up interviews with them, and a senior and middle leader. Once confirmed, we then contacted the relevant EA and set-up an interview.

Across the sample, we aimed to speak to one CPD lead in each hub with representatives from both primary and secondary schools across the sample. In the end, telephone interviews were undertaken with five CPD leads, five senior leaders (typically a deputy headteacher or headteacher), five middle leaders, and all five EAs. The interviews were undertaken between November 2019 and January 2020. Selected characteristics of this sample are shown below.

Table 16 Details of telephone case study interviewees, together with selected CPD lead and school characteristics

Case study number	CPD lead	EA	Senior leader	Middle leader	CPD leads' years of experience of leading CPD (at start of project)	Characteristics of CPD leads' schools: Phase	Characteristics of CPD leads' schools: Region	Characteristics of CPD leads' schools: ofsted *	Characteristics of CPD leads' schools: Ever 6 FSM quintile**
1	✓	✓	✓	✓	2	Secondary	North West	3	5 (Highest 20%)
2	✓	✓	✓	✓	1	Secondary	North East	3	4 (2nd Highest 20%)

Case study number	CPD lead	EA	Senior leader	Middle leader	CPD leads' years of experience of leading CPD (at start of project)	Characteristics of CPD leads' schools: Phase	Characteristics of CPD leads' schools: Region	Characteristics of CPD leads' schools: ofsted*	Characteristics of CPD leads' schools: Ever 6 FSM quintile**
3	✓	✓	✓	✓	3	Primary	Yorkshire and Humber	3	5 (Highest 20%)
4	✓	✓	✓	✓	4	Primary	South East	3	4 (2nd Highest 20%)
5	✓	✓	✓	✓	2	Primary	West Midlands	3	5 (Highest 20%)

*1=Outstanding; 2=Good; 3=Requires Improvement; 4=Inadequate

**This column shows the proportion of pupils who were eligible for free school meals over the last six years (Ever6 FSM). The population of schools has been split into five equal groups or quintiles. Those schools in quintile 1 are in the lowest group (i.e. compared to schools in other quintiles, they have the lowest proportion of pupils eligible for free school meals).Those in quintile 5 are in the highest group (i.e. compared to schools in other quintiles, they have the highest proportion of pupils eligible for free school meals).

Appendix C: SWC matching and comparison group construction

Data sources

The main data source used for the retention and progression analysis was the School Workforce Census (SWC). The SWC has been collected annually on the first Thursday of November since 2010 and it observes teaching staff and their characteristics from all state-sector schools in England. The key teacher characteristics recorded in the SWC and used for the analysis comprised gender, age, qualification date and role, while key school characteristics include school phase, type and region.

Each teacher in the SWC is assigned a unique identifier, which enables analysis of the same individual over multiple censuses. This allows observation of key pieces of information about teachers' careers, such as whether they leave state-sector teaching, move school/ area, or progress into a more senior role.

The SWC records the school in which each teacher is employed, meaning it is also possible to identify teachers who move to different schools, LAs and regions[25]. However, since the SWC does not include teachers in private sector schools or schools outside of England, any teachers who moves to one of those schools will appear to have left teaching, even though, in reality, they may not have.

The data quality and response rates to the SWC are very high, so the data has good coverage and few gaps. However, it has some gaps due to schools not submitting returns or individual teachers missing from submitted returns, so to minimise the influence of errors and data gaps, improving the reliability of our retention outcomes records were imputed where gaps or errors were particularly evident.[26] While this is unlikely to have completely eliminated all instances of SWC data gaps, it is also unlikely to affect the interpretation of the findings as they are very likely to affect treatment teachers/ schools in a similar way to comparison teachers/ schools.

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[25] Teachers may have contracts in multiple schools, but the file used for this evaluation contains one observation per teacher per year of the 'main school' that a teacher is working in. The observed school changes are therefore changes in the 'main school' as recorded in the SWC.

[26] Cases where data gaps are obvious include the observations in which a teacher is not recorded in a school in a year after which the SWC records them as having started in a particular role. For example, if the SWC shows a particular teacher is working in a school in the 2017 census year and they are recorded as having started in their current role in the 2016 census year, where they have no SWC record, then the missing record for 2016 is imputed. In these cases, it is assumed they were teaching in the same school as in 2017, and their time-variant characteristics are imputed as appropriate (reducing their observed age, experience, etc. by one year). School-level characteristics and teacher-level characteristics that do not vary by time (i.e. gender, ethnicity), are set to their observed value in 2017. This imputation affects relatively few records and does not apply to any records in which role start date is not observed.

In addition to the teacher-level variables, school-level data was used for the analysis including region, phase, Ofsted rating and Achieving Excellence Area (AEA) category, published by the DfE.[27]

The final data source consisted of the management information (MI) data collected by the TLIF providers on the teachers participating in each of the TLIF projects, and collated by DfE. The MI data observes teachers' personal details, participation in any of the TLIF projects, along with the provider, the name of the school in which the teacher participated in the training and, for some projects, the training start and end dates.

Each teacher in the MI data was linked to their SWC records using their name, Teacher Reference Number (TRN) and birth date. Across all TLIF projects, 97 per cent of teachers in the MI data were matched to at least one record in the SWC. Match rates varied somewhat across the different projects, although were generally very good, even after accounting for teachers in the MI data which linked to multiple teachers in the SWC, or did not link to an SWC record in the year in which they were recruited to the project.[28]

Table 17 shows that all records in the MI data for the TDT CPD Excellence Hubs project matched to the SWC.

Table 17 Matching MI data to the SWC

MI data	Frequency or percentage
Total staff/schools identified in the MI data	1268
Total teachers/ schools matched to at least one SWC record	1268
Match rate (%)	100

Methodology

After linking the MI data to the SWC, the group of comparison schools was derived whose retention and progression outcomes were compared to TDT-participating schools. The school characteristics used for matching were taken from the baseline year, which was the November 2017 SWC for all schools in this project.

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[27] The latest data is available here: https://www.get-information-schools.service.gov.uk/
[28] Cases such as these where the match was clearly wrong were removed from the analysis.

With this full set of potential comparator schools, a statistical technique *propensity score matching* was used to ensure that our treatment and comparison groups were highly comparable in observable characteristics. First, the probability (propensity score) that a particular school with given characteristics was part of the treatment group was estimated. TDT-participating schools were then matched with up to ten of their 'nearest neighbours' – comparison schools with the most-similar likelihood of being in the treatment group, and therefore with the most similar observed characteristics.

When propensity score matching is able to match on all of the variables that influence selection into the treatment group, then the only remaining difference between the treatment and matched comparison group is the effect participating in the project had. However, variables can only be included in the matching if they are observed in the data. If other unobserved variables influence selection into the treatment group, and also affect retention, then this may partially explain some of the differences in outcomes between the two groups. The potential for this 'selection bias' means caution should be exercised about interpreting the differences between the groups as representing the impact of the project.

The following school characteristics (observed at the baseline year) as variables in the matching: school phase, Ofsted rating, AEA category, quintile of free school meal (FSM) eligibility, quintile of attainment[29], pre-baseline year retention rates and an indicator of whether the school was participating in any other TLIF projects. Since the TDT project was targeted in defined geographical areas, region of the school was not included as a matching variable.

The quality of the match was assessed by examining cross-tabulations of the matching variables across the treatment and comparison groups. Where the variables are balanced – meaning the distribution of characteristics is similar between the treatment and comparison groups – the propensity score matching can be said to have performed well.

As all of our outcome variables are dichotomous (i.e. yes or no), the differences in retention and progression outcomes between the two groups were estimated using logistic mixed-effects regression modelling. Retention and progression are considered separately from four different perspectives:

1. Within the profession as a whole one, two and three years after baseline

2. Within the same school one, two and three years after baseline

3. Within the same LA one, two and three years after baseline

4. Within a 'challenging' school one, two and three years after baseline.

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[29] Attainment was measured as the proportion of pupils in the school that met the minimum requirements in Reading, Maths and Science at Key Stage 2 (for primary schools) or GCSEs (for secondary schools). Schools were assigned to an attainment quintile based on this proportion.

A teacher was considered to have been 'retained' in the profession if they are recorded as teaching in a state-sector school in England in a given year, and then are also teaching in a state-sector school in England one year later.[30]

A teacher was considered to have been 'retained' in the same school/LA if they were teaching in a particular school/LA in a given year, and were then recorded as teaching in the same school/LA (based on URN and LA codes) one year later. A teacher was considered to have been 'not retained' in the same school/LA if they were in teaching in a particular school/LA in a given year, and were then recorded as teaching in a different school/LA (based on URN and LA codes) one year later. If they were not recorded in the SWC one year later i.e. not retained in the profession, they were not included in these analyses.

'Challenging schools' were generally defined as schools which were rated by Ofsted as 'requires improvement' or 'inadequate'. However, all TDT participating schools were assumed to be 'challenging' at baseline because they had been deemed to be 'challenging' enough to have been targeted by the TDT project. A teacher was therefore considered to have been retained in a 'challenging school' if they were either still in the same school, or had moved to another school which was rated 'requires improvement' or 'inadequate'. It should be noted that this same definition also applies to comparison teachers (including those in 'good' or 'outstanding' schools not targeted by the TDT project), but the results of the statistical matching (see Table 15) ensure that the observed characteristics of the 'good' and 'outstanding' schools in the comparison group are similar to the observed characteristics of the 'good' and 'outstanding' schools within the treatment group.

As a concrete example, a TDT participating teacher in a 'good' school who stayed in the same school, or a non-TDT participating teacher in a 'requires improvement' school who moved to an 'inadequate' school would both be considered to have been 'retained in a challenging school'. Any teachers who moved to another school with a 'good' or 'outstanding' rating were considered to have moved to a 'non-challenging' school, regardless of the rating of the school they were in at baseline.

Progression was defined according to three broad role categories – classroom teachers, middle leaders, and senior leaders. Middle leaders were defined as teachers in a "Leading Practitioner", "Excellent Teacher", "Advanced Skills Teacher", or "Advisory Teacher" post, or who received a Teacher Leadership Responsibility (TLR) payment of £100 or more in a given year[31]. Senior leaders were defined by those in an "Executive Head Teacher", "Head Teacher", "Deputy Head Teacher" or "Assistant Head Teacher" role in a given year.

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[30] To reiterate from the Data Sources section, since the SWC only observes teachers in state-sector schools in England, any teacher who moves to a private school or to a school outside of England will be considered to have left the profession.
[31] This is a definition of middle leader that has been used by DfE in the past. See Footnote 14 in https://www.gov.uk/government/statistics/teachers-analysis-compendium-2017

A teacher was considered to have 'progressed' if they moved from a classroom teacher role to either a middle or senior leadership role, or a middle leadership role to a senior leadership role. Progression within a school/LA/challenging school was defined as those teachers who remained within the same school/LA/a challenging school and progressed from classroom teacher to middle leadership or middle leadership to senior leadership. Teachers not retained in the profession were not included in the progression analyses.

Eight different regression models were estimated, one each for retention and progression within the same school/LA/challenging school/profession. As independent variables, all of the variables from the propensity score matching were included – in order to control for any remaining imbalances in the matching variables between the treatment and comparison groups after matching – as well as the treatment indicator, census year and an interaction between these variables. School was included as a random effect. Senior leaders were excluded from the sample estimating the effect on progression as, based on the definition above, they are not able to progress any further and therefore progression outcomes are 'did not progress further' by definition.

To compare the differences between the two groups the probability that each teacher in the matched sample would have been 'retained' or 'progressed' was estimated if they had been involved in the project, and then again if they had not been involved in the project, in each of the five census years. The average of these predicted probabilities was taken to find the estimated retention/progression rate, with and without the treatment. The difference between these estimated retention/progression rates is the estimated 'marginal effect', which is presented in the tables in section 4.4.3 Findings related to fund-level goals – impacts. The difference-in-difference testing was then performed to compare the difference between treatment and comparison, between pre-baseline and each post-baseline year. For each post-baseline year, the treatment vs. comparison difference was compared to an average of the pre-baseline differences. The same difference-in-difference estimates are presented as odds ratios in Appendix D: Outcomes of SWC impact analysis. Statistical significance is assessed at the five per cent level.

Statistical Matching

Table 18 below highlights the sample characteristics for the full treatment and comparison groups. Most characteristics, like AEA category and attainment quintile, were not closely aligned before matching.

Schools in the potential comparison group tended to be fairly evenly spread over attainment and FSM quintiles, and the majority were teaching in non-priority schools (AEA categories 1-4). TDT participating schools, however, were much more likely than potential comparison schools to be secondary schools, and more deprived and lower-attaining schools. Unlike comparison schools, nearly all treatment schools were AEA category 5 or 6 schools, as these were the schools targeted by the project.

After matching, the proportions of comparison schools in each of the key matching characteristics were much more closely aligned with treatment schools. The propensity score matching has ensured that schools in the matched comparison group are drawn primarily from AEA category 5 and 6, more-deprived and lower-attaining schools. While some small differences between treatment and comparison teachers still existed after matching, including the matching variables in the logistic regression modelling ensured that our final estimates controlled for any of these outstanding differences.

Table 18 Characteristics of potential comparator schools, schools in the intervention group and matched comparison schools

Characteristic	Potential comparator schools (%)	Project schools (%)	Matched comparison schools (%)
Nursery	0	0	0
Primary	75	60	65
Secondary	15	40	35
16 Plus	0	0	0
Special	5	0	0
AEA category 1-2	30	0	0
AEA category 3	15	0	0
AEA category 4	20	0	0
AEA category 5	15	30	45
AEA category 6	15	60	55
FSM lowest 20%	20	0	5
FSM middle-lowest 20%	20	10	5
FSM middle 20%	20	10	10
FSM middle-highest 20%	20	30	25
FSM highest 20%	20	50	55
Unknown FSM	10	0	0
Attainment lowest 20%	15	40	40

Characteristic	Potential comparator schools (%)	Project schools (%)	Matched comparison schools (%)
Attainment middle-lowest 20%	20	40	40
Attainment middle 20%	20	20	10
Attainment middle-highest 20%	20	0	0
Attainment highest 20%	15	0	5
Unknown Attainment	15	10	5
Ofsted Inadequate	5	10	10
Ofsted Requires improvement	10	60	60
Ofsted Good	65	20	20
Ofsted Outstanding	20	0	0
Ofsted Unknown	0	10	5
Number of schools	21603	39	390
Number of teachers	500488	1910	12159

Note: Matching was performed at a school level so these percentages are also at a school level e.g. 10 per cent of schools not 10 per cent of teachers. Comparison school percentages are rounded to the nearest 5 per cent. Treatment school percentages are rounded to the nearest 10 per cent. The rounding is to ensure data are not disclosive.

Appendix D: Outcomes of SWC impact analysis

Table 19 Odds ratios from the retention and progression outcome analysis

Retention and Progression Measures	1 year after baseline	2 years after baseline	3 years after baseline
Retention in state-funded teaching	1.1 (0.8 – 1.3)	0.9 (0.7 – 1.1)	1.4 (1.0 – 1.8)
Retention in the same school	0.7 (0.5 – 0.8)	0.9 (0.7 – 1.2)	1.1 (0.8 – 1.5)
Retention in the same LA	0.6 (0.5 – 0.8)	0.8 (0.6 – 1.0)	1.1 (0.7 – 1.6)
Retention in challenging schools	0.6 (0.5 – 0.8)	0.8 (0.6 – 1.0)	0.9 (0.6 – 1.4)
Progression in state-funded teaching	0.8 (0.6 – 1.1)	0.6 (0.4 – 0.8)	0.9 (0.7 – 1.3)
Progression in the same school	0.9 (0.6 – 1.2)	0.6 (0.4 – 0.9)	0.9 (0.7 – 1.3)
Progression in the same LA	0.9 (0.6 – 1.2)	0.6 (0.5 – 0.9)	0.9 (0.7 – 1.3)
Progression in challenging schools	0.9 (0.6 – 1.2)	0.6 (0.4 – 0.9)	1.0 (0.7 – 1.3)

Note: Figures in brackets represent the 95 per cent confidence interval of the odds ratio estimate.

Appendix E: Sample characteristics

Table 20 Selected characteristics of achieved survey samples at baseline, endpoint and in the matched analysis - Role

Role	Baseline	Baseline	Endpoint	Endpoint	Matched analysis	Matched analysis
	N	%	N	%	N	%
Classroom teacher	0	0	0	0	0	0
Middle leader	2	6	3	19	2	13
Senior leader	33	94	13	81	13	87

Table 21 Selected characteristics of achieved survey samples at baseline, endpoint and in the matched analysis - Years of leading CPD in Partner School

Years of leading CPD in Partner School	Baseline: N	Baseline: %	Endpoint: N	Endpoint: %	Matched Analysis: N	Matched Analysis: %
More than ten years	2	6	2	13	2	13
6-10 years	1	3	1	6	1	7
3-5 years	12	34	6	38	6	40
1-2 years	8	23	4	25	4	27
Less than one year	12	34	3	19	2	13

Table 22 Selected characteristics of achieved survey samples at baseline, endpoint and in the matched analysis - Participation in the project

Participation in the project	Baseline: N	Baseline: %	Endpoint: N	Endpoint: %	Matched Analysis: N	Matched Analysis: %
Joined from the start and completed*	N/A	N/A	10	63	9	60
Joined after the start but completed*	N/A	N/A	5	31	5	33
Dropped out early; did not complete	N/A	N/A	1	6	1	7

Table 23 Selected characteristics of achieved survey samples at baseline, endpoint and in the matched analysis - Phase of teaching

Phase of teaching	Baseline: N	Baseline: %	Endpoint: N	Endpoint: %	Matched Analysis: N	Matched Analysis: %
Primary	22	63	7	47	7	50
Secondary**	13	37	8	53	7	50

Table 24 Selected characteristics of achieved survey samples at baseline, endpoint and in the matched analysis - Ever6 FSM quintiles

Ever6 FSM quintiles	Baseline: N	Baseline: %	Endpoint: N	Endpoint: %	Matched Analysis: N	Matched Analysis: %
Quintile 1 (lowest)	0	0	0	0	0	0
Quintile 2	2	6	0	0	0	0
Quintile 3	3	9	1	7	0	0
Quintile 4	10	29	4	27	4	29
Quintile 5 (highest)	18	51	8	53	8	57
Missing	2	6	2	13	2	14

Table 25 Selected characteristics of achieved survey samples at baseline, endpoint and in the matched analysis - Ofsted rating

Ofsted Rating	Baseline: N	Baseline: %	Endpoint: N	Endpoint: %	Matched Analysis: N	Matched Analysis: %
Outstanding	0	0	0	0	0	0
Good	8	23	2	13	2	14
Requires improvement	22	63	11	73	10	71
Inadequate	5	14	2	13	2	14
Outstanding	0	0	0	0	0	0
Good	8	23	2	13	2	14

Percentages are rounded and so may not sum to 100.

*These responses include respondents who completed the project prior to completing the endpoint survey, as well as those who were still participating in the project at the time they completed the endpoint survey.

**One all-though school participated in the project and has been classified as secondary to avoid disclosure.

'Role', 'years of leading CPD', and 'participation in the project' are all individual respondent-level variables. 'Phase', 'Ever6 FSM' and 'Ofsted' are all school-level variables.

NB: in some schools, the staff member with responsibility for CPD changed during the project, which may explain some of the differences in the teacher-level characteristics between the baseline and endpoint sample.

Appendix F: Description of factor analysis undertaken on core survey questions

Approach to fund-level factor analysis

The TLIF project evaluations included surveys of participants at baseline and endpoint. The surveys included 'core questions' – common questions and items included in all the TLIF surveys - with the aim of providing data that could be combined across all projects to analyse fund-level outcomes. Surveys also included, to differing extents, 'bespoke questions' – questions that were specific to the project focus and outcomes. This section explains the approach taken to factor analysis of the survey 'core questions'.

Factor analysis is a statistical technique that summarises information from a number of survey items into a smaller set of reliable outcome measures. It combines survey items that are correlated and assess the same underlying latent construct by grouping together question items that have similar patterns of responses. This enables more robust and straightforward analysis than reporting single items. We used the factors derived through this analysis as our outcome measures to report the survey findings in this report.

Factor analysis was conducted in two stages. First, it was conducted on the core question items that were asked of all respondents in exactly the same way. This resulted in Factors 1 to 4 for all respondents. Second, it was conducted on core question items that covered consistent themes, but where the wording, or the inclusion, of items varied slightly depending on the role of the respondent (class teachers, middle leaders, or senior leaders). Given respondents' status as CPD leads, most of the respondents fell into the category of senior leaders. This resulted in Factors 13 and 14 for senior leaders.

Each survey question was designed to measure a specific construct – for example 'leadership quality' – through a series of items related to that construct. In our analysis, the items that loaded onto each individual factor were, in most cases, derived from a single survey question. This indicates that our survey was successful in measuring the constructs that it intended to. Most survey questions were answered on a Likert scale (e.g. an 8-point agree-disagree scale). The response on the scale was converted to a score for each item, then combined to produce a mean score and score range for each of the factors. Any teacher, middle or senior leader that answered a third or less of the items entered into the factor analysis were removed from the analysis for the purpose of constructing the factors on a consistent set of responses.

Factors were selected that met the following criteria:

- strong internal consistency of each factor which indicates reliability (indicated by a high Chronbach's Alpha statistic on a range from 0 to 1)

- loadings above 0.3, which indicate an association between items and the underlying factors. The relationship of each item to a factor is expressed by a factor loading. Factor loadings are similar to correlation coefficients – a higher value on a range from -1 to 1 indicates a stronger correlation with the factor

- Eigenvalues greater than 1, which indicate strong validity of the factors (the additional variance explained by bringing items together into a single factor)

- low levels of correlation between factors, indicating that each factor is measuring something slightly different.

Several factors were only comprised of two items. However, we deemed this to be acceptable as a two-item factor provides a more robust measure of a concept than two separate items.

Some questions and items that were entered into factor analysis did not load onto factors or form reliable factors. These are analysed separately in each TLIF report, as applicable to the project.

Factors for all respondents

Table 26 Factor 1: Effectiveness of school leadership (all)

Effectiveness of school leadership (all): Item statements	Loading
My school leadership team: sets a clear vision	0.769
My school leadership team: is effective	0.768
My school leadership team: creates an ethos within which all staff are motivated and supported to develop their own skills and subject knowledge	0.734
My school leadership team: sets high expectations for all pupils	0.721
My school leadership team: challenges assumptions about low capabilities of disadvantaged pupils	0.694
My school leadership team: uses data to monitor the quality of teaching and learning and to initiate improvements where required	0.683
My school leadership team: identifies professional development as a priority for all teachers	0.673
My school leadership team: values experimentation and the introduction of new ideas for teaching and learning	0.660
My school leadership team: trusts staff to adapt teaching practices to meet the needs of pupils	0.650
My school leadership team: sets the conditions for effective behaviour management	0.649

Effectiveness of school leadership (all): Item statements	Loading
My school leadership team: supports teachers to develop their careers (either via a teaching or leadership route, depending on their interest)	0.646
My school leadership team: identifies professional development as a priority for all support staff	0.597
My school leadership team: facilitates collaborative work with other schools	0.569

Reliability of measure: Alpha = 0.941

Table 27 Factor 2: Effectiveness of professional development (all)

Effectiveness of professional development (all): Item statements	Loading
The facilitation of the professional development I have received is effective	0.806
The content of the professional development I have received is relevant to my needs	0.796
The professional development I have undertaken has been effective	0.755
There is support to implement learning from professional development	0.709
I have access to high-quality professional development	0.687
I am encouraged to undertake professional development	0.589
I receive support to undertake follow-up activities when engaging in professional development	0.584

Reliability of measure: Alpha = 0.917

Table 28 Factor 3: Effectiveness of school culture (all)

Effectiveness of school culture (all): Item statements	Loading
I enjoy working at my school	0.679
Most pupils achieve the goals that are set for them in my school	0.588
My school has a collaborative culture characterised by mutual support	0.558
All in all, I am satisfied with my job	0.529
The atmosphere throughout my school encourages pupils to learn	0.524
My workload is manageable	0.507

Reliability of measure: Alpha = 0.818

Table 29 Factor 4: Motivation for professional development (all)

Motivation for professional development (all): Item statements	Loading
I am keen to engage in professional development	0.807
Professional development plays a major role in helping me to improve the quality of my teaching / leadership	0.772

Reliability of measure: Alpha = 0.831

Factors for senior leaders (SL)

Table 30 Factor 13: School teaching quality (SL)

School teaching quality (SL): Item statements	Loading
Teachers in my school have the required subject pedagogical knowledge to effectively teach their subject(s) / key stage	0.914
Teachers in my school have the required generic pedagogical knowledge to effectively teach their subject(s) / key stage	0.901
Teaching across different subject(s) / key stages is generally very good	0.867
Teachers in my school set high expectations for all pupils' achievement	0.828
Teachers in my school have the required subject knowledge to effectively teach their subject(s) / key stage	0.803
Teachers in my school manage behaviour effectively to ensure a safe learning environment	0.709
Teachers in my school use research findings to make changes to their teaching practice	0.678

Reliability of measure: Alpha = 0.931

Table 31 Factor 14: Opportunities for career progression (SL)

Opportunities for career progression (SL): Item statements	Loading
I have the opportunity to progress into a senior system leadership position if I want to (e.g. (NLE), Multi-Academy Trust Chief Executive, Teaching School Alliance Director)	0.853
I have the opportunity to progress into a system leadership position if I want to (e.g. a specialist leader of education (SLE))	0.815

Reliability of measure: Alpha = 0.821

Factors that were bespoke to the TDT CPD Excellence Hubs project

Table 32 Factor 1: Extent to which schools explicitly tailored professional development to needs of individual teachers and support staff

Item statements	Loading
To what extent does your school explicitly tailor professional development to the following? - Individual needs of teaching staff	0.583
To what extent does your school explicitly tailor professional development to the following? - Individual needs of support staff in pupil support roles (e.g. teaching assistants/learning support assistants)	0.995
To what extent does your school explicitly tailor professional development to the following? - Individual needs of support staff in other roles (e.g. administrative staff/school business managers)	0.792

Reliability of measure: Alpha = 0.824

Table 33 Factor 2: Extent to which a range of approaches were used to evaluate the effectiveness of professional development

Item statements	Loading
In your school, to what extent is the effectiveness of professional development evaluated in the following ways? - Through monitoring of staff job satisfaction	0.747
In your school, to what extent is the effectiveness of professional development evaluated in the following ways? - Through monitoring of impacts on budgets	0.702
In your school, to what extent is the effectiveness of professional development evaluated in the following ways? - Through monitoring of teachers' views on their individual professional development experiences	0.696

Reliability of measure: Alpha = 0.798

Table 34 Factor 3: Barriers to leading professional development

Item statements	Loading
To what extent, if at all, do you find the following are barriers to your role in leading professional development to positively impact on pupil outcomes? - Staff attitudes towards support for training and development	0.647
To what extent, if at all, do you find the following are barriers to your role in leading professional development to positively impact on pupil outcomes? - Time/workload issues of your own	0.635
To what extent, if at all, do you find the following are barriers to your role in leading professional development to positively impact on pupil outcomes? - Release of teachers from teaching duties	0.719
To what extent, if at all, do you find the following are barriers to your role in leading professional development to positively impact on pupil outcomes? - Release of support staff from duties	0.477
To what extent, if at all, do you find the following are barriers to your role in leading professional development to positively impact on pupil outcomes? - Financial issues	0.697
To what extent, if at all, do you find the following are barriers to your role in leading professional development to positively impact on pupil outcomes? - Balancing the needs of the individual with the needs of the school	0.668
To what extent, if at all, do you find the following are barriers to your role in leading professional development to positively impact on pupil outcomes? - Awareness of the range of professional development opportunities available	0.591
To what extent, if at all, do you find the following are barriers to your role in leading professional development to positively impact on pupil outcomes? - Lack of support from internal colleagues to develop innovative teaching practice	0.567

Reliability of measure: Alpha = 0.8

Appendix G: Analysis of Management Information for the Teaching and Leadership Innovation Fund: Teacher Development Trust

Introduction

The Teaching and Leadership Innovation Fund (TLIF) was a DfE fund through which 10 providers offered support to schools in a variety of areas from behaviour management to phonics and STEM teaching. The aim of the fund was to create and develop a sustainable market for high-quality Continuous Professional Development (CPD). This is a summary of Management Information (MI) data submitted by all ten providers receiving TLIF funding and **does not** assess project impact. The data was submitted in February 2020 and covers the schools and participants recruited, as indicated by the providers.

Comparable national figures in this report are based on the 2018 School Workforce Census covering teaching staff in state-funded schools, and Ofsted as at the most recent inspection. The 2018 School Workforce Census was chosen in order to align with the most schools across programme cohorts between 2017 and 2020. The school level analysis refers to all schools that were recruited by providers to participate in the project, including those that withdrew. Schools may have been recruited by more than one provider and participants may have been registered for more than one project.

Targets: Background

Each provider had a number of Key Performance Indicators (KPIs). These were broken down into 3 different categories:

- **geography:** whether specific areas were targeted by providers (e.g. regional targets, Opportunity Areas, priority areas) and whether particular schools were targeted by providers (e.g. based on Ofsted rating).

- **schools:** the target number of schools.

- **participants:** the target number of teachers.

All providers had a geography target and either a participant or a school target, but not necessarily both.

In the context of the TLIF evaluation, a priority area is defined as Achieving Excellence Areas (AEAs) 5 or 6 (Opportunity Areas fall within this category). A priority school is defined as a school with an Ofsted rating of Requires improvement (Ofsted grade 3) or Inadequate (Ofsted grade 4).

Note: there are some discrepancies between the overall numbers from providers and those in the data set sent to us. The provider numbers cannot be broken down in school/area type etc. so analysis will not be conducted on this data, however headline figures will be presented where available.

Targets: Breakdown

Teacher Development Trust (TDT) delivered the CPD Excellence project, which sought to improve the leadership, culture and processes of CPD in schools. TDT had the following KPI targets:

Geography Level:

- 100% of schools were to be recruited from priority areas.
- The programme targeted 5 areas: Northumberland, Blackpool, Birmingham, Stoke and West Sussex.

School Level:

- The original target was for 40 schools to be recruited during the programme. Because of the timing of a school leaving the programme, DfE agreed to a reduction in the minimum number of schools to 39.
- The project was aimed at both Primary and Secondary schools.

Participant Level:

- The programme recruited from all teaching and leadership levels.
- The project aimed to recruit 230 leaders and 1100 teachers, but this was not a hard target.

Total School Numbers

A total of 39 schools were recruited by TDT. The initial target was 40, however a revised target of 39 was agreed by DfE after one school withdrew. No further schools withdrew from the project. 97% of schools recruited were from priority areas, slightly below the target of 100%.

Total participant numbers

The total number of teachers that participated in the project was 1080. The goal (but not a hard target) was for 1330 to be recruited.

Note: TDT's own data put the number of participants at 1096, however, not all of these participants were present in our data set.

Schools by Phase

TDT recruited participants from both Primary and Secondary schools. Of all participant schools 36% were Secondary schools compared to 16% nationally. 64% of participating schools were Nursery or Primary school, compared to 78% nationally

Schools by Region

TDT recruited from schools in 5 of the 8 RSC Regions:

- 23% of recruited schools were in the North region,

- 23% in the West Midlands,

- 21% in the East Midlands & Humber region,

- 21% in Lancashire & West Yorkshire,

- 13% in South Central and North West London.

The areas recruited from line up with the initial target areas of Northumberland, Blackpool, Birmingham and Stoke, but don't include West Sussex, which is in the RSC region South East England and South London.

Schools by AEA Category

AEA categories are DfE classifications of Local Authority Districts (LADs) by educational performance and capacity to improve, introduced in 2016. It splits areas into six categories from "strong" Category 1 areas to "weak" Category 6 areas.

Of all the schools recruited by TDT (including withdrawals) 97% were in Categories 5 and 6 with around 3% were in category 3.

Schools by Index of Multiple Deprivation Decile

The Index of Multiple Deprivation (IMD) is a "neighbourhood" measure of deprivation produced by the Ministry of Housing, Communities and Local Government. Each neighbourhood is placed in a decile with 1 being the most deprived and 10 being the least deprived.

Of all schools recruited by TDT, schools in the most deprived areas were generally over-represented, and schools in the least deprived areas were generally under-represented. 21% of all schools recruited by TDT were located in the most deprived decile 1.

Participants by role

Roles were provided in TLIF Management Information as free text and matched to a standardised leadership level. These have been compared to national figures taken from the 2018 School Workforce Census Publication.

While the target was 230 leaders and 1100 teachers, TDT recruited participants from all teaching and leadership levels:

- 673 classroom teachers,

- 260 middle leaders,

- 107 senior leaders

- 38 headteachers.

The overall distribution of leadership levels was similar to that of the teaching profession nationally:

- 62% of participants identified as classroom teachers (compared to 57% nationally),

- 24% of participants were middle leaders (compared with 28% nationally),

- 10% were senior leaders (compared with 10% nationally),

- 4% were headteachers (compared to 5% nationally).

Appendix H: Extent to which CPD leads were involved in each of the main elements of the CPD Excellence Hubs project

CPD leads answering the endpoint survey were asked to indicate whether they were involved in each of the main elements of the TDT CPD Excellence Hubs project. Those who were, were then asked to rate the extent to which each element met their needs on a scale of 1 to 8 where 1 was 'Not at all' and 8 was 'fully'. The scale has subsequently been collapsed into four categories as follows: 1-2 ('Not at all'); 3-4 ('Somewhat'); 5-6 ('Moderately'); 7-8 ('Fully').

The findings are based on all of the CPD leads who responded to the endpoint survey. Some caution should be taken in interpreting the findings due to the small underlying numbers. As a result, only frequencies (rather than percentages), are presented.

Regular support/coaching from EAs

Table 35 Whether involved

	Yes	No	Total
N	15	1	16

Table 36 Extent to which provision met needs

	Not at all	Somewhat	Moderately	Fully	Total
Likert scale	1-2	3-4	5-6	7-8	
N	0	0	3	12	15

Whole-school CPD audit

Table 37 Whether involved

	Yes	No	Total
N	16	1	16

Table 38 Extent to which provision met needs

	Not at all	Somewhat	Moderately	Fully	Total
Likert scale	1-2	3-4	5-6	7-8	
N	0	0	2	14	16

Access to a portal/TDT platform with CPD resources

Table 39 Whether involved

	Yes	No	Total
N	13	3	16

Table 40 Extent to which provision met needs

	Not at all	Somewhat	Moderately	Fully	Total
Likert scale	1-2	3-4	5-6	7-8	
N	1	3	3	6	13

Half-termly CPD Leader Forums/Hub meetings

Table 41 Whether involved

	Yes	No	Total
N	15	1	16

Table 42 Extent to which provision met needs

	Not at all	Somewhat	Moderately	Fully	Total
Likert scale	1-2	3-4	5-6	7-8	
N	0	1	3	11	15

Training on how to best support middle leaders via one of the CPD Leader Forums/Hub meetings

Table 43 Whether involved

	Yes	No	Total
N	11	5	16

Table 44 Extent to which provision met needs

	Not at all	Somewhat	Moderately	Fully	Total
Likert scale	1-2	3-4	5-6	7-8	
N	0	0	6	5	11

Appendix I: CPD leads' understanding and use of the 2016 Standard for Teachers' Professional Development

CPD leads answering the baseline and endpoint surveys were asked if they were aware of the 2016 Standard for Teachers' Professional Development. The standard, which is based on the latest research evidence, provides a description of effective practice in professional development for teachers. CPD leads who reported they aware of it, were then asked whether they had implemented the standard in their school. The findings show that, compared to the baseline, a greater proportion of those responding at endpoint were aware of the standard and had implemented it in their schools.

Table 45 "Have you heard of the 2016 Standard for Teachers' Professional Development?" (Baseline survey)

Response	N	%
Yes	18	51
No	12	34
Not sure	5	14
Total	35	100

Percentages may not sum to 100 due to rounding

Table 46 "Have you heard of the 2016 Standard for Teachers' Professional Development?" (Endpoint survey)

Response	N	%
Yes	9	82
No	1	9
Not sure	1	9
Total	12	100

Percentages may not sum to 100 due to rounding

Table 47 "Have you implemented the standard in your school?" (Baseline survey)

Response	N	%
Yes	7	39
No	11	61
Total	18	100

Respondents were only routed to this question is they reported they were aware of the 2016 Standard for Teachers' Professional Development (see tables above)

Percentages may not sum to 100 due to rounding

Table 48 "Have you implemented the standard in your school?" (Endpoint survey)

Response	N	%
Yes	9	100
No	0	0
Total	9	100

Respondents were only routed to this question is they reported they were aware of the 2016 Standard for Teachers' Professional Development (see tables above)

Percentages may not sum to 100 due to rounding

Appendix J: Practical summary of the evidence about effective CPD (Coe, 2020)

CPD that aims to support the kinds of changes in teachers' classroom practice that are likely to lead to substantive gains in pupil learning should:

1) Focus on promoting the teacher skills, knowledge and behaviours that are best evidenced as determining pupil learning. Such content should be appropriately sequenced and differentiated to match the needs of participants.

2) Have sufficient duration (two terms) and frequency (fortnightly) to enable changes to be embedded.

3) Give participants opportunities to:

> a) be presented with new ideas, knowledge, research evidence and practices

> b) reflect on and discuss that input in ways that surface and challenge their existing beliefs, theories and practices

> c) see examples of new practices/materials/ideas modelled by experts

> d) experiment with guided changes in their practice that are consistent with these challenging new ideas and their own context

> e) receive feedback and coaching from experts in those practices, on an ongoing basis

> f) evaluate, review and regulate their own learning

4) Create/require an environment where:

> a) participants can collaborate with their peers to support, challenge and explore

> b) school leadership promotes a culture of trust and continuous professional learning

> c) teachers believe they can and need to be better than they are

> d) the process and aims of the CPD are aligned with the wider context (eg

Source: Coe, R. (2020). 'The case for subject-specific CPD.' Paper presented at the Subject CPD Roundtable, Institute of Physics, London, 22 January.