Improving Progress in Mathematics Project
2017-18
Cohorts 1 and 2
Impact Report

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Improving Progress in Mathematics Project, 2017-18
Cohorts 1 and 2
Summary of impact and learning

During 2017-18, 35 Hertfordshire schools engaged in the project to improve their progress in mathematics across Key Stage 2. The average increase by the project schools was +0.6 (from their previous year’s progress score), based on a projected 2018 model, which has brought the average progress for the project schools from -0.97 in 2017 to -0.37 in 2018. The project schools are now in line with the Hertfordshire average for progress in mathematics where they had previously performed below.

Aim of the project

The aim of the project was to support schools to implement changes to the teaching and leadership of mathematics to improve the progress of pupils across the whole of Key Stage 2. The impact of the activities schools engaged in will continue to be embedded over the next few years to sustain improvement.

Project outline and structure

Schools applied to join the project following an open invitation to all Hertfordshire headteachers (with Key Stage 2 provision). Thirty-five schools were selected to form two cohorts. The project began for both cohorts with a launch training day, which was attended by two leaders from each school, typically the Headteacher and Mathematics Subject Leader. For cohort 1 (18 schools), this launch training was in June 2017 and for cohort 2 (17 schools), this was in October 2017. All schools signed up to a contract and committed to a number of agreements. For example, the sharing of data with advisers and ensuring that the project was a key school priority area for the academic year. Both cohorts received a series of follow up consultancy visits from a project adviser. These were, in the main, half-day visits to the school. They were timed to discuss recent assessment data for the term and areas of focus related to the project and to then agree actions going forward which would be likely to have the most significant impact upon progress. The actions from the previous visit were also reviewed at each subsequent visit. The final visit for each school was undertaken in July 2018.

Impact measures

To gain an early indication of the impact on outcomes for pupils, data from the end of Key Stage 2 for 2018 was analysed to provide an evaluation of cohorts 1 and 2, and to inform the provision for cohort 3:

Overall progress

- As a collective of 35 schools, the average progress for the previous year (2016-17) was -0.97. This was below that of Hertfordshire (-0.30) and of schools in counties classed as statistical neighbours (-0.7).
- From analysis of initial data, the average progress for the 35 schools (2017-18) is -0.37.
- This is a +0.6 change. The project schools are now broadly in line with the Hertfordshire county average (likely to be -0.4 for 2018).
Progress by cohort

- Cohort 1 schools, who started in June 2017, had 5 visits. The average improvement in progress was +0.83.
- Cohort 2 schools, who started in October 2017, had 3 visits. The average improvement in progress was +0.36.

Impact on the most vulnerable schools

- For the 13 schools who started with a negative progress figure in 2016-17, the average increase was +1.23.
- The number of schools in the project with a progress figure lower than -2.0 was reduced from 11 schools in 2016-17 to 5 schools in 2017-18.

Impact of additional TLA support

- Evidence indicates that schools with a Teaching and Learning Adviser package (additional mathematics adviser support) had benefitted from using this time to support the implementation of changes to mathematics teaching and/or a refinement of leadership activities. This is reflected in the provisional 2018 data.
- The 17 schools with a TLA package improved progress by +0.83.
- The 18 schools without a TLA package improved progress by +0.36.

Impact on attainment

- The 35 progress project schools increased the proportion of pupils achieving the expected standard (or above) from 75.7% in 2017 to 77.2% in 2018.
- Similarly to progress, the attainment of the project schools is now broadly in line with the Hertfordshire average (77.0% in 2017 and 76.8% in 2018) improving from just below to just slightly above the Hertfordshire average.

Analysis using provisional progress figures for 2017-18

<table>
<thead>
<tr>
<th></th>
<th>2016-17 progress</th>
<th>2017-18 progress</th>
<th>Change in progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>All schools in Hertfordshire</td>
<td>-0.30</td>
<td>-0.40*</td>
<td>-0.10</td>
</tr>
<tr>
<td>Statistical neighbour</td>
<td>-0.70</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td>All progress project (35 schools)</td>
<td>-0.97</td>
<td>-0.37*</td>
<td>+0.60</td>
</tr>
<tr>
<td>Cohort 1 (18 schools)</td>
<td>-1.53</td>
<td>-0.69*</td>
<td>+0.83</td>
</tr>
<tr>
<td>Cohort 2 (17 schools)</td>
<td>-0.38</td>
<td>-0.03*</td>
<td>+0.36</td>
</tr>
<tr>
<td>Project schools with negative progress in 2016-7 (13 schools)</td>
<td>-2.09</td>
<td>-0.86*</td>
<td>+1.23</td>
</tr>
</tbody>
</table>

NB: Due to the way progress is calculated the national average progress score is always 0.

*Provisional data
## Analysis of attainment

<table>
<thead>
<tr>
<th></th>
<th>2016-17 EXS+</th>
<th>2017-18 EXS+</th>
<th>Change in attainment %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertfordshire</td>
<td>77.0</td>
<td>76.8</td>
<td>-0.2</td>
</tr>
<tr>
<td>All progress project</td>
<td>75.7</td>
<td>77.2</td>
<td>+1.5</td>
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<tr>
<td>(35 schools)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Cohort 1</td>
<td>75.6</td>
<td>75.9</td>
<td>+0.3</td>
</tr>
<tr>
<td>(18 schools)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohort 2</td>
<td>75.8</td>
<td>78.5</td>
<td>+ 2.7</td>
</tr>
<tr>
<td>(17 schools)</td>
<td></td>
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</tbody>
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### Learning from the project: Impact on leadership and teaching provision

The positive impact on the attainment and progress of pupils is likely to be as a direct result of school leadership’s drive to enhance teaching provision. The project has supported leaders to focus their attention and activity to maximise returns in this endeavour. Evaluation with school leaders in each school has identified a number of key areas.
Impact on leadership

Many schools welcomed the opportunity to better understand the expectations of progress across Key Stage 2, and how the ‘progress figure’ is calculated. The vast majority of schools who applied to join the project did so partly because the progress figure they achieved in 2015/16 or 2016/17 (or both) was not as high as they would have liked. Schools entering the project had progress figures which ranged from around -4.8 up to +2.5 in 2017, with 22/35 schools starting the project with negative progress scores. The focus upon how the figure is calculated helped some to understand how they could impact on improving it and ultimately move to a positive figure.

This often led to more refined and strategic tracking of Year 6 pupils (from their KS1 APS prior attainment). For example, looking at any practice SATs paper scaled scores in a more informed way and using this to help plan targeted provision. Generally, tracking of pupils in all year groups, (from KS1 prior attainment) also improved, not just Year 6.

Tracking Year 6 pupils using their KS1 APS prior attainment

One school who particularly valued the greater understanding of how progress is calculated under the current system, went on to closely track their Y6 pupils and their practice paper scores. They realised that, by previously focusing on attainment (for example, a scaled score of 100+ for EXS), some pupils who were middle attaining pupils at KS1 might be targeted by the school to reach 100+ by the end of KS2. In reality, these pupils actually needed to attain, for example, 106 to 108 as a scaled score to achieve a positive progress when compared to national averages. This changed the way practice paper scores were viewed including the expectations of pupils’ achievement and targeting of provision.

The vast majority of schools indicated that Pupil Progress Meetings had been enhanced and were now more rigorous. Leaders expected and supported teachers to prepare for a more meaningful conversation. Teachers arrived having reviewed their own data in advance. They were ready to discuss focus pupils' learning and identified target areas. Leaders then helped to refine pupil targets (specific areas of mathematics learning that would enable pupils to make better progress), challenge expectations if necessary, and consider the provision needed to support this acceleration. As a results of this, actions were more swift and engagement of all concerned ensured better impact.

Transferring strategies to other subjects including English:

A few schools talked about transferring the most appropriate strategies, such as challenging conversations in Pupil Progress Meetings, to English. Some schools used the proformas provided by the project for mathematics to identify pupils at risk of not making positive progress in reading and writing as well. As with mathematics, focus pupils were identified and plans were made to support the areas of mathematics. One leader commented that this process of focusing upon key stage progress had identified previously ‘invisible’ pupils who had not been previously flagged up as a potential concern.
Transferring strategies to other subjects including English (cont'd)

As well as looking at progress in reading, writing and mathematics, some schools looked more closely at the combined %RWM figure in all year groups (not just year 2 and 6) to inform the actions of teachers and leaders.

Tighter, more strategic and focused monitoring was also a common thread. For example, if subject leaders carried out a book scrutiny this was now more likely to involve a greater proportion of the books of the focus pupils (pupils not on track for positive progress). Evaluation was then concentrated upon whether any insecure learning had been addressed. For example, if they had not fully understood the learning in a lesson (as demonstrated by the work in books) there was a clear indication that this had been quickly identified and addressed. This may well have been evident in the additional support, the next lesson or through rapid intervention.

Monitoring activities focused upon improving learning

Many subject leaders described how monitoring activities had developed from compliance with policy to a sharper focus upon learning. Rarely were they now looking to ensure teachers were adhering to agreed presentational focuses. These aspects didn’t diminish. Teachers knew standards must be maintained. Leader’s had greater clarity about the value and benefit of really focusing upon learning.

One subject leader described how they used book reviews with greater precision. They described how they reviewed sample books with teachers to identify when and how any fragile learning had been picked up and successfully addressed. But, also, where it hadn’t. The scrutiny of books supported not only monitoring and evaluation but even more effectively served as immediate professional development for teachers. It helped them to ‘see’ what was working and what learning still needed to be addressed.

Impact on teaching, learning and provision:

Leaders in the project schools commonly talked about areas in which they had supported teachers to become more consistent in their practice, such as the use of concrete resources to support teaching and learning. Many schools referenced developing a CPA approach (Concrete Pictorial Abstract) to developing both teachers’ and pupils’ use of representations.

Other aspects of teaching and areas of pedagogy strengthened by schools, with an aim to improve outcomes were:

- pitch of teaching including expectations of the teacher and subject knowledge
- improved sequences of learning (by the teacher) that deepened understanding of the learning (by the pupils)
- better modelling and better use of language by pupils including the use of sentence starters and speaking frames.
The project year coincided with the launch of Herts for Learning's **ESSENTIALmaths** planning and materials. The schools who adopted this across their school found that CPA opportunities were embedded within the planning and materials, as are speaking frames and opportunities for application, reasoning and problem solving, within the ‘Destination Questions’.

Some schools also worked to establish **Fluency Sessions** (generally, 2-3 times per week or more, for 10-15 minutes, in addition to the daily maths lesson), to develop pupils’ ability to recall key / core knowledge such as number facts, and retain learning over longer periods such as telling the time on analogue and digital clock faces.

**‘Rapid’ or ‘Same-day’ intervention** (sometimes called immediate intervention) was used to either supplement or replace a more traditional interpretation of intervention in many schools. During or straight after the maths lesson, the teacher quickly checked the understanding and confidence of pupils’ to ascertain whether any require support before the learning moves on in the next lesson.

**Rapid intervention as described by one school**

Where teachers did this well, towards the end or after a maths lesson, a small number of children who had not fully understood the learning would be identified. Those pupils would then receive an additional short burst of support, possibly a further 5-10 minutes, to recap the key learning and give a chance to practice a further example, so that in the next lesson they could begin at the same place as other children. The key was providing pupil(s) with a chance to rehearse, secure and embed learning before it moved on. One school described it as a policy of “keep up rather than catch up” and noted that, when it worked well, more children within the class were accessing the age related expectations over time.

One key aspect of the project was to **identify focus children** each term: pupils in the cohort who were not (yet) on track for positive progress in maths over the key stage. These pupils were identified each term and their progress discussed, including as part of adviser visits. The purpose was to ensure that each child not on track for positive progress (in-year and across the key stage) had a specific mathematics learning target which would move them a step closer to being on track. Leaders were supported to ensure this was a high-value area of learning. Most commonly this was either tied into Pupil Progress Meetings, or ran parallel to the Pupil Progress Meeting process, on a termly basis. Over the year, teachers were challenged to be increasingly smart about the learning targets they set or barriers they identified. Leaders were challenged by advisers not to accept answers such as “they’re just not very confident”. Feedback from this identification of focus pupils and the setting of learning targets indicated that it raised their profile and better enabled the teacher to focus their attention to address gaps in learning.

**ESSENTIALmaths** is a comprehensive suite of materials that maps and resources the maths curriculum for each year group in sequences. For further details please visit the Herts for Learning online shop: hertsforlearning.co.uk/resources/essentialmaths
Learning that the project schools are most likely to take forwards

One of the main aspects that schools acknowledged led to increased impact was the extent to which they ensured that any changes to teaching, policies or leadership actions were embedded (had become part of routine practice) and were consistent (were carried out by everyone and to the standard the school set). Whether this was related to using speaking frames to improve pupils’ vocabulary and verbal reasoning; the policy for giving feedback, particularly where children had not fully understood learning; or the preparation required for effective Pupil Progress Meetings. Embedding changes and striving for consistency of good practice were found to be key.

When reflecting upon what they would take forward, leaders identified the need to be clear about which actions had most impact and related this to the proportion to the time invested in them. Schools are immensely busy places. Many leaders articulated that they often ran out of time to do everything. So a cost-benefit view was crucial. Taking time to really reflect upon what action had the most impact was valuable.

Making effective use of time and ensuring teacher ownership of monitoring feedback

One subject leader talked about the immediate impact on teachers of asking them to share a couple of maths books in a staff meeting, focusing on the target pupils. Staff looked at how pupils' needs were being addressed – highlighting that, if a child had not fully understood some learning, then something needed to happen to address this, and how this might look in books. This short (15-20 minute) section of a staff meeting allowed everyone to reflect on their current practice and consider whether it was effective. This enabled teachers to see the value of 'same day intervention' (or rapid / immediate intervention as it is referred to in some schools). By comparison, a full work scrutiny (not in staff meeting time and without all the teachers participating) might have previously taken a couple of hours with additional time for feedback but essentially leading to the same outcome.

In a related vein, some leaders also talked more generally about the need to involve staff more. Specifically, in the rationale for joining the project, the actions being taken and then the follow up monitoring. With hindsight, some felt that they might have experienced greater impact had the staff ‘bought into’ the project more. Outlining the rationale, expectations and commitment from the outset is crucial.

Leaders often articulated the need to plan ahead and be strategic. For example, schools carefully adjusted their assessment cycle during the year. Windows for making judgements about attainment are now closely followed by moderation opportunities (ensuring increased accuracy of judgements) and then followed this with well-timed Pupil Progress Meetings, which in turn affected provision. This ensured refinements to meet the learning needs of pupils was swift.

Some schools reflected broadly upon their learning to take forwards. The need to provide clear induction for new staff – particularly on the key systems and elements of provision which the school had identified as being key to securing good pupil progress. A few leaders identified how valuable it had been to concentrate upon this particular group of pupils (those
not currently on track for positive progress) and they will maintain this focus through building it into existing systems. Many agreed that the year spent on the project was in fact the first step on a continued journey.

**Advice the project schools would provide to others**

Schools were very positive about the overall experience and impact of the project. Even in the few schools where there had not been an immediate shift in data outcomes, leaders reflected on the value of taking part and said they would recommend that other schools apply for a place in future cohorts. Some schools were honest that with hindsight, they would have taken greater ownership, or dedicated a little more time earlier, had they fully realised the potential of the work. The advice to future project participants was clear:

- Consider how the project is ‘launched’ with staff in your school, so that they buy into the aims, work with the school leaders to understand the rationale and purpose of what is being asked of them.
- As a school, take ownership of the project. For example, when gathering data ahead of visits, see this as for the school’s benefit, because the better the information is understood, the more likely the school is to have impact when trying to improve it.
- Protect time for meaningful dialogue and discussion. Including creating a clear space for the adviser visits, so that the most can be made of this time.
- When monitoring and evaluating, take time to discuss the findings (as a leadership team) and then ensure clear feedback is given. Staff need to understand what is going well and should continue but also where there is room for development or changes needed.
- Be prepared to challenge long-standing ways of doing things, such as the way interventions are run and managed or Pupil Progress Meetings undertaken. With a financial and time investment as large as this is in some schools, can you afford for this not to have significant impact?

It was a privilege to work alongside all 35 schools who took part in cohorts 1 and 2. The advisers who led the project learnt much from the schools and were able to share this with other participants. The mutual trust established enabled deep discussion and learning to take place and the Herts for Learning team on this project would like to extend their thanks to all those schools who took part.

Herts for Learning is looking forward to welcoming a further 30 schools into cohort 3 of the project, which runs from September 2018 to July 2019.

**Primary Teaching and Learning Adviser team (mathematics)**
**Herts for Learning**
**September 2018**

For more information about the Herts for Learning [Improving Progress in Mathematics Project](mailto:training@hertsforlearning.co.uk) please contact [training@hertsforlearning.co.uk](mailto:training@hertsforlearning.co.uk)

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