

## Westdene Teaching School Alliance

Alliance name	Westdene TSA
Alliance context	Westdene TSA works with all schools across Brighton & Hove and has developed partnerships further afield in the south-east and beyond.
Schools involved in the R&D project	Westdene Primary School (primary 3-11) Patcham High School (secondary 11-16) Carden Primary School (primary 3-11) Patcham Junior School (7-11) Coldean Primary School (primary 3-11)
Research focus	What makes great pedagogy?
Research question(s)	What makes for effective pedagogy and transition in mathematics from KS2–KS3?

### The implementation phase

Anecdotal evidence from our own past pupils from primary school suggests that disaffection sets in at KS3 when pupils' prior attainment is not taken into account and pupils are asked to repeat content they have already covered in years 5 and 6. The new national curriculum has raised expectations in terms of pupil outcomes and presents new challenges in terms of the progression in curriculum delivery between KS2 and KS3.

The Ofsted report *Made to Measure* (2012) states that 'more than 37,000 pupils who attained level 5 at primary school gained no better than grade C at GCSE in mathematics in 2011'. This poor national record is one that we have aimed to address locally.

In Brighton & Hove, GCSE statistics show a lack of good progress from KS2-KS4 in mathematics and so improving leadership, teaching and learning in the subject is now a city wide priority.

Existing research by Galton and Hargreaves (1999) also noted that much of schools energy around transfer was directed onto the pastoral side to reduce 'pupil anxiety' but that 'pupils' learning progress seemed to be less effectively understood or handled' and 'as a result 'dips' in pupils' attitude and engagement could occur'.

## **How did you go about establishing your partner schools?**

We approached the local secondary school and two other main feeder schools. A third feeder school came on board in the second year - having attended twilights where the initial findings and project R&D materials were shared.

## **What were the intended outcomes of the project (for staff and pupils)?**

- A smoother academic transition from KS2-KS3 for pupils in mathematics.
- A better understanding of the mathematics curriculum / pedagogy in primary and secondary for staff that impacts on practice for the benefit of pupil experiences and outcomes.

## **What evidence did you gather at the baseline stage?**

- pupil questionnaire – all year 6 and 7 pupils
- pupil interviews – six pupils from each primary who were in years 6 and 7 (two from each identified as lower attaining, two as average, two as higher; three boys and three girls from each)
- staff questionnaire

## **What did baseline data tell you?**

- The baseline pupil data revealed differences in attitude already emerging between year 6 and 7 pupils. These were probed more deeply by using a 'diamond 9' activity that enabled students to rank the features of their mathematics lessons and the features of an ideal mathematics lesson.
- Staff surveys revealed a lack of understanding about the curriculum coverage in other phases.

## **The innovation phase**

### **What pedagogical strategies have you been trialling throughout the project?**

We focused on several of the nine claims about what makes great pedagogy from existing research to drive our project forward:

#### **1. Effective pedagogies give serious consideration to pupil voice**

- We took account of the analysis of the diamond 9 activity / pupil survey results and planned lesson approaches accordingly. This led to less text book work, more collaborative learning and rich mathematical problems.

## **2. Effective pedagogies depend on behaviour (what teachers do), knowledge and understanding (what teachers know) and belief (why teachers act as they do)**

- We began with observations of KS2 teachers by KS3 and vice versa (some secondary teachers said they hadn't been into a primary school since they were 11 themselves). As the project developed, this evolved into the formation of cross-phase coaching pairs.
- We developed subject expertise enhancement courses for primary colleagues on level 6 content and on preparing to deliver the higher expectations of the new national curriculum.
- KS3 teachers have led master-classes for pupils from KS2 so they can experience first-hand the standards / skills pupils are attaining by the end of Year 6.
- KS2 teachers led master-classes for pupils in year 6 and year 7 who were working at level 3 and 4.

## **3. Effective pedagogies involve thinking about longer term learning outcomes as well as short term goals**

- Our project aims to have an impact on progress with a positive effect on longer term learning outcomes at the end of KS4.

## **4. Effective pedagogies build on pupils' prior learning and experience**

- We have resurrected the national numeracy strategy (NNS) bridging units and have jointly taught a module in year 6 that continues into year 7.
- Working in collaboration we have audited pupils' methods for written calculation in KS2 and KS3 to enable us to align our approaches and policies.

## **5. Effective pedagogies embed assessment for learning**

- We have developed a student driven data transfer that enables pupils to be very reflective about their mathematical strengths and development areas from their primary school experience. This document transfers to KS3 and enables pupils to see their learning as a journey or continuum. It enables their KS3 teachers to take more precise account of curricula strengths and target areas so they 'can hit the ground running' at the start of term in year 7.

## 6. Effective pedagogies focus on metacognition

- Our baseline data revealed that some pupils felt they were “no good at maths” and that there was nothing they could do to change this. All four schools embarked on an approach to promoting a ‘growth mindset’ (Dweck, 2006). We have consistent images and learning attributes that are evident in all four schools to enable pupils to better understand and develop successful skills / attitudes for learning.

### **How did you maintain and build the momentum and collaborative dimension of your work? How did you distribute the leadership of this work?**

It was essential to recruit key staff as project leads in each school including advanced skills teachers, subject leaders and an expert researcher from the University of Sussex. Project leads took on responsibility for different aspects of the R&D work.

## The impact phase

### **What claims are you making (backed up by evidence) about the impact of your work on:**

#### **Staff knowledge attitudes, skills and practice:**

- Excellent evaluations of impact on teacher attitudes to transition and raised expectations. Our JPD, paired observations and development of coaching pairs have led to a shift in attitudes, skills and behaviour. For example our qualitative evidence shows teachers at KS3 say the coaching pairs experience has “encouraged me to take risks with my teaching” and “has raised my expectations of calculation without calculators” and led to “more discussion and more class input to a topic”.
- KS2 teachers report a much better understanding of subject knowledge and progression leading to greater confidence in how to teach more able pupils. Cross phase JPD on delivering the level 6 curriculum was attended by over 20 schools.
- This qualitative data is reflected in the quantitative pupil outcome data below.

#### **Learner knowledge attitudes, skills, behaviours:**

- Pupil progress from year 6 to year 7 shows an upward trend when comparing autumn 2013 data with previous years at Patcham High School (year 7 had 93 per cent of pupils on or above target compared with 73 per cent in the year 9 cohort who had not been part of the new approaches to transition).
- Increased performance at level 6 at Westdene Primary School in 2013 from 2012. (20 per cent in 2014 and 15 per cent in 2013 from 3 per cent in 2012.)

- More schools in Brighton & Hove entering KS2 pupils for level 6 maths tests in 2014 than in 2012 and 2013.
- Student questionnaires and interviews show a greater satisfaction of experience on transfer and 'more confidence' with mathematics.

### **Your school, other schools and anything else you gathered evidence about:**

- A culture of joint practice, cross-phase development is embedded. We have worked with Brighton and Hove's secondary mathematics subject facilitators and held two city wide 'maths meets' with 40+ teacher attendees at each session from KS1-KS4. Other teachers / professionals followed the sessions and engaged in this professional development through twitter.
- All city clusters are involved in the development and delivery of mathematics subject expertise training that is being delivered during the autumn term 2014.

## **Final conclusions**

### **1) What have you found out about what makes great pedagogy?**

- The most powerful element of our R&D project has been the establishment of cross phase coaching pairs. This enabled practitioners to focus on pedagogy and consistency of curriculum planning across KS2-KS3.
- There has been a focus on the individual child's needs rather than planning for the perceived group average.
- Deployment of staff (such as advanced skills teachers (ASTs)) in year 7 (rather than year 11), who understand the academic issues around transition, has had a major impact on pupil outcomes.

### **2) What have you found out about how to engage in collaborative R&D?**

- Identify an issue that is a top priority for all institutions involved. This will also lead to senior leaders supporting the work and authorising necessary release time.
- Identify members of staff to lead the project in each school who feel passionate about the project focus area.
- We feel we have had success more widely because we have chosen to undertake our R&D work at a time of great educational change - when schools are already reviewing their curriculum and practices. This has made others more willing to engage.

- Take time to build relationships between staff across schools. This social capital, once established, will ensure the work has longevity and sustainability.

### **3) What have you learnt about the nature of collaborative enquiry that brings about improvement for pupils?**

- In order to see a sustained improvement, new initiatives need to be embedded into whole departments and whole schools or there will be no long term gain. These initiatives will need to form part of induction for new staff otherwise, with natural staffing changes, learning is lost.
- Whole staff Inset and regular re-launches are required to maintain momentum.
- All the materials we produced were trialled with feedback invited from all stakeholders. They were then adapted, improved and re-trialled to ensure full ownership by all concerned.
- It was essential to have expert support in the form of our attached HEI research partner who enabled us to interlink theory with practice. They not only guided our initial baseline data collection, but then assisted us in interrogating that data and helped us to pose questions for the study. Due to the slight distance of this expert partner - they were also able to act neutrally in a governance capacity along with the director of the TSA.
- Funding was vital in order to provide release time to colleagues and this was coupled with having conducive space in which to work collaboratively.
- Although there was distributed leadership amongst the collaborating partners, it was essential that someone took on the role of overall project lead with the associated accountability to deliver within budget and timeframes.

### **4) How will you ensure your learning is shared and sustained going forward?**

- We have built up and established significant social capital amongst the staff in partner schools and beyond. These relationships and networks will continue to flourish through our continued JPD work.
- There is clear evidence that school leaders are widening their emphasis at KS2/KS3 transfer from the pastoral to curriculum continuity and progression. All of our research materials have been shared on Brighton & Hove intranet Pier2Peer for all 80+ Brighton & Hove schools to access.
- Teachers recognise that the pupil self-assessment sheets 'allowed children to reflect upon their strengths and areas for development in a very specific way'. They were seen as a 'powerful way to focus and assist their start to the new academic year'. One of the ASTs from Patcham High School is promoting this

approach to transition assessment through city-wide head of department meetings and the excellent maths teacher network.

- Sussex University have launched a new ITT training route in mathematics enabling PGCE mathematics trainees to work in feeder primary / secondary schools over a year. This was based on a successful pilot model in two project schools; Patcham High School and Westdene Primary School. We will be hosting a joint placement again in 2014-15.
- Partners will continue to present our research at local and national conferences. Most recently one of our AST partners from Patcham High School presented at the La Salle National Education Conference in September 2014.
- We are now exploring how we can establish a stronger link with our nearest national Maths Hub to further influence the work of schools across the south east region.

## References

Ofsted, (2012) *Made to Measure*, London, Ofsted

Galton and Hargreaves, (1999), *Inside the Primary Classroom: 20 Years on*, Routledge, London

Dweck, C, (2006), *Mindset: The New Psychology of Success*, New York, Random House