



## ACTION RESEARCH PROJECTS

2014-2015



## TEACHERS' REPORTS

**RGTSA**

Royal Greenwich Teaching School Alliance

**University of Greenwich  
Royal Greenwich Teaching School Alliance**

**CONTRIBUTORS:  
JULIE SHEPPEY  
DAISY ROTHWELL  
ALLISON BOTHAM & JODIE CAWTE  
SUZANNE TOMLINSON  
ANGELA SMITH  
YANOULA CONSTANTINO**

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## FOREWORD

### ROYAL GREENWICH TEACHING SCHOOL ALLIANCE: ACTION RESEARCH PROJECTS

John Camp

As we transform and reshape the manner in which schools enable teachers to continue to learn, practitioner research occupies an increasingly central place in the culture of the school. By engaging with the theories and ideas of academics, schools can better understand the effectiveness of all that they do and feel a greater sense of empowerment as they reform pedagogy and grasp the mantle of professional knowledge creation.

The Royal Greenwich Teaching School Alliance is committed to sponsoring practitioner research across the authority so that our collective professional capital is enhanced through the investigation and exploration of genuine questions that are centred on effective pedagogy and learning. The Alliance is focused on bringing the very best national and international speakers into Greenwich to facilitate debate and engagement of highest standard whilst, at the same time, nurturing home-grown researchers who contribute to the growing body of knowledge that enables the profession to sustain itself.

Every teacher is a researcher. We are committed to supporting them in sharing their understanding with the wider professional community for the benefit of all learners.

John Camp  
Executive Headteacher  
RG TSA



## FOREWORD

### ROYAL GREENWICH TEACHING SCHOOL ALLIANCE: ACTION RESEARCH PROJECTS 2014/15

Professor Andrew Lambirth

This year my Colleague, Dr Ana Cabral, and I from the University of Greenwich have had the privilege of working with a group of talented teachers from schools within the Alliance who were all interested to study their own practice in order to enrich the learning of the children they teach. We worked with two core groups. One met at The John Roan School and the other at Thomas Tallis School. The John Roan group was coordinated by Paul Barber and the Tallis group by Andy Smythe. Andy's group of teachers were interested in studying ways to enrich the teaching of science. The John Roan group were interested in enriching the teaching of literacy. Ana and I wanted to introduce the teachers to action research. The classic work by Carr and Kemmis (1986) describe action research as being about:

- the improvement of practice;
- the improvement of the understanding of practice;
- the improvement of the situation in which the practice takes place.

It was important to us that the teachers were systematic about the way they undertook their investigations. Teachers are busy people and the degree to which they applied the methodology varied. We discussed their aims – constructing research questions or identifying the problem they wished to solve. We worked on the best ways of collecting data to inform their actions and we talked about the ethical issues of being an 'insider-researcher' and how to address them.

#### Action Research Process (Creswell, 2012)

Identify information you will need: plan a strategy for gathering data. Decide from whom you need to gather the data. Consider ethical implications.	Identify a problem to study
	Locate resources to help address the problem
	Analyse the data
	Develop a plan for action
	Implement the plan and reflect
	Identify new focus

We met with the teachers at least three times during a term and on a number of occasions we went to schools or had telephone conversations when teachers were too busy to attend. The meetings with the teachers were fascinating. The combination of teachers from secondary and primary led to exciting and fruitful professional conversations. Everyone recognised how pedagogy associated with each phase challenged and enriched the other. In some cases, the teachers invited each other into their classes and team teaching took place as a result, bringing forth further rich professional discussions. Research has informed us that the most effective forms of continuing professional development (CPD) (BERA/RSA 2014) involve:

- the use of specialist advisors and external experts
- collaborative enquiry and structured peer support
- the opportunity to explore why things do and don't 'work'
- the exploration and challenging of teachers own beliefs and assumptions (p.25 – 27).

'All the research indicates that enquiry-orientated learning is not a quick-fix, but needs to be a sustained over time to ensure that learning (for both teachers and pupils) actually takes place'. (BERA/RCA 2014: 26)

The RG TSA wants to make this form of teacher-led inquiry part of the practice in their schools. We hope to continue with these powerful projects in the coming years.

In this document we provide the reports from the teachers that describe their work. They document the processes with which the teachers were engaged. In most cases teachers collected information from their own surveys or interviews and/or from reading literature in the area. They then describe the action they felt to be appropriate and conclude with a brief evaluation of the success of their projects. They all demonstrate the teachers' hard work and determination. We would like to extend our thanks to all the teachers and the children involved and especially to Paul Barber and Andy Smythe who helped facilitate the projects.

Professor Andrew Lambirth  
Faculty of Education and Health, University of Greenwich

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# 1 | DOES GROUPING AFFECT CHILDREN'S ENGAGEMENT AND ACHIEVEMENT IN SCIENCE?



**Julie Sheppey**  
**Thorntree Primary School**

## 1.1 | INTRODUCTION

When teaching science I have always had a curiosity as to whether children are more engaged and therefore learning more when sitting in mixed ability or science ability groups. As an Inclusion Manager and Science Coordinator I have always advised teachers that children should not be grouped according to their Literacy or Numeracy abilities in Science, rather in Science ability or mixed ability groups. I wanted to find out exactly how children learn best to improve my practice and enable me to better support my colleagues.

I specifically set out to discover if children more actively engage in science lessons and learn better collaboratively according to which groups they are seated in.

## 1.2 | METHODOLOGY: COLLECTION OF INFORMATION TO INFORM ACTION

I asked teaching colleagues how they arranged their children for science.

Our Year 4 teacher uses a mixture of seating; literacy groups for lessons involving writing and either mixed or science ability seating for practical work. He finds that when in science ability seating, the children in the lowest group need a lot of adult support, which takes time away from other groups that would benefit from further challenge. He also finds that some children in the highest ability group tend to sit back and let others do the work, whereas they will be more involved when in mixed ability.

Our Year 1 teacher always sits her children in mixed ability groupings. She finds that they learn best in this way, learning from each other and sharing ideas. She also feels that behaviour is better when children are in mixed ability seating. Although children do have whole class science lessons, the teacher also chooses to carry out guided science groups so that within a day all children will carry out a guided science experiment.

I also read some of the literature around setting. Research generally suggests that the children that usually benefit from ability setting are the more able. In ability-based grouping, pupils in lower groups are vulnerable to making less progress and that no one form of organisational grouping benefits all pupils (DES 2005). Grouping needs to be flexible and to be evaluated, and teachers should be responsive to emerging effects (DES 2005, Hallam 2002).

## 1.3 | ACTION/RESULTS

### Action

I teach a Year 5 class science for 1 ½ hours a week. As I am not their class teacher, I had no pre conceived ideas about the children's learning behaviours and general levels of engagement in learning. I was able to view them solely as learners of science.

I needed to get to know the children's abilities before being able to set them for science so I used mixed ability seating for the first half term. I got to know each child's level of enthusiasm for the subject and science ability through questioning, their engagement during practical sessions, the work produced and through a very short assessment I devised using Testbase.

Using this information I was able to group the children according to what I saw as their science ability. I initially intended to sit the children for three weeks in mixed ability seating, then three weeks in science ability seating. However, I did not get all of the information required during this time so I carried it over into the next topic and repeated.

I gathered information by observing the learning behaviours of groups of children, recording conversations and comparing the work in books. I also informally questioned children at the end of sessions and asking them throughout the week what they thought of the science lesson and why. I also asked them what they learned and did they work to the best of their ability. I asked a random selection of children which seats they felt they worked best in and why.

### Results

All data collected was qualitative and mostly anecdotal. Not all observations made were linked to the initial question posed – by the sheer fact of looking so closely at groupings and how children learn best, I was able to make conclusions about how other factors such as group sizing affects learning.

As a school we talk a lot about learning styles and multiple intelligences. Therefore, children already know which 'smartnesses' they possess. When children are sitting in mixed ability seating, children are encouraged to work towards their strengths when taking on roles during practical investigations. The 'word smart' member of the group takes on the role of scribe whereas the 'people smart' member of the group makes a good motivator. Then every child in the group has a role that suits their strengths. This method of carrying out investigations does not work as well when children are in science ability seating as there is not the same mix of strengths.

From my observations, children learn more during practical activities when in groups of three or four. Although this makes it harder in terms of resourcing, all children are included and there is no room for children to sit back and let others do the work. I find that generally when children work in pairs, they are not as able to problem solve and come up with meaningful conclusions – discussion is narrow. When asking children for their opinions throughout the school, they also say that they learn best in threes or fours.

I have also observed that although demonstrations always have their place in science, investigations should be carried out in small groups rather than children watching the teacher have all the fun.

This was the biggest issue our children made to governors when questioned a couple of years ago. Since this has been actioned, children speak very favourably about science at our school – many children now say it is one of their favourite subjects.

In science ability groups I did see changes in learning behaviour. In middle and higher groups, child-led discussions included more children. I was able to ask challenging questions which were at the level of all children in the group. Lower groups appeared to be more engaged during investigations when supported by an adult. They appeared more interested and their work rate was higher. I noticed a tendency in mixed groups for lower ability children sit back more and allow others to be more active. Indeed, in the lower ability groups I noticed a rise in self-esteem. However, this was only when being supported by an adult. The children were unable to stay on task when working independently and were not able to carry out work with any level of challenge without adult support.



FIG.1 PUPILS PARTICIPATING IN THE ACTIVITIES.

#### 1.4 | CONCLUSIONS AND RECOMMENDATIONS

Some of my observations appear to be similar to what some of the literature is suggesting is best practice; the importance of flexibility of grouping and close regular evaluation by the teacher being a key point.

- **Mixed ability grouping proved to be the preferable arrangement for discussion and collaborative written work.** Behaviour for learning is much better in this arrangement and children are able to learn from each other, especially benefitting the less able children. During investigative work, the giving of roles is also easier to do in mixed ability groups; however, teachers need to be aware that less able children tend to sit back and let others take over more.
- **Science ability grouping proved to be the preferable arrangement for investigative practical work** as I found with this arrangement I could direct adult support more effectively and differentiate by task. I was able to direct appropriate questions to challenge groups and most children were engaged and included in child-led discussions.

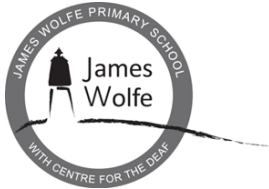
It is important to note that the behaviour of the low ability children became an issue when not supported by an adult. Because of their lack of independence and confidence, if the task was challenging in any way they would not attempt it and went off task. This is similar to what literature suggests, that it is the more able learners that benefit more from ability grouping.

- **Children with ASD or social communication difficulties** find the collaborative element of science very difficult regardless of groupings. My response to this is to **allow these children to work alone or with a partner of their choice during practical tasks**. Their science learning is much improved and their stress levels remain low. I am aware that this is not aiding their social skills, so every so often I ensure that the objective of their lesson is a social skills objective and that the supporting adult assists the child in working in a group for that particular part of the lesson.
- **Optimum group size is three or four**. This allows every child a meaningful role and there is no room for a child sitting back and letting others take over. It also leads to greater discussion, debate and conclusions based on scientific knowledge.

### 1.5 | REFERENCES

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## 2 | AN INVESTIGATION INTO HOW BLOGGING CAN BE USED TO IMPROVE WRITING ATTAINMENT IN YEAR 6



**Daisy Rothwell**  
**James Wolfe Primary School**

### 2.1 | INTRODUCTION

My initial research objective was to investigate how we could use blogging to improve writing attainment for children, particularly those identified as in receipt of Pupil Premium (PP). Having used blogging in an unsystematic way over the last academic year, I was keen to see how it could be incorporated into the children's writing process. My own experience had led me to believe that using the blog engaged children with the writing process as children were more motivated to publish a piece of writing that would be seen by a potentially wide audience and were interested in the feedback that they were receiving. In exploring current research I found that there have been a number of recent studies looking at the impact of blogging on children's learning. Whilst most are US based and focused on secondary or higher education, a 2012 research paper produced by The CFBT Education Trust, which looked at three Lambeth primary schools, concluded that blogging did have a positive impact on writing outcomes. The study describes blogging as contributing to progress in writing mainly through generating enthusiasm and motivation:

*"In most classrooms, for most pupils, blogging resulted in pupils' increased engagement in writing, increased confidence in writing, greater awareness of audience, a greater sense of their 'voice' as a writer, greater awareness of their own writing and that of others, and an enhanced sense of belonging to a writing community."*(Barrs and Horrocks 2014)

Using the findings and recommendations of this study and drawing on what we already know about the power of feedback in learning (Hattie and Timperly 2007), I narrowed my focus to investigate how we could develop our use of commenting on the blog to move children on in their writing. The CFBT study found that writing on the blog was often of a personal and informal nature and the types of comments offered were generally more supportive. I was keen to explore how both myself as teacher and the Year 6 students themselves could embed the principles of structured feedback marking into their commenting.

The ethical dimensions of this action research project were considered. Although the work I was undertaking was very close to my normal classroom activity, there were differences mainly in the systematic nature of my approach to change-making in my class and with whom data and results were shared: anonymised data was to be shared with the action research group and would be discussed at an international conference in Nottingham. In addition, a professional journal article was to be written to disseminate my findings. I ensured that I had permissions from the Head teacher and the children were informed about my intentions and their consent was sought. All the participants were aware of the action research project and that the data collected would be anonymised to ensure confidentiality. Participants were told that their names would never be disclosed in any publication or presentation. No audio or video recordings were made. The blogs were all password protected and access available to password holders within the school



## 2.2 | METHODOLOGY: COLLECTION OF INFORMATION TO INFORM ACTION

In order to inform the action I was to undertake, I used an initial pre-project survey to ask Year 6 children about their engagement and perceptions of blogging. I then selected seven children identified as PP to further investigate how they used the blog, how they felt about blogging and their writing.

In the second autumn term I increased the amount children who were able to use the blog during class time by building into the learning sequence a weekly blogging session. The session would either involve redrafting a piece of writing that the children were working on, responding to an online writing challenge (such as the 100 Word Challenge), free writing or using the time to offer and respond to comments.

In response to feedback from the initial surveys and interviews, I set up a bi-weekly breakfast blogging club to provide children identified as PP with additional time to use the blogs.

Within each writing topic, I incorporated at least one lesson where the learning was focused on using specific criteria to evaluate their own, their peer's or anonymous pieces of writing with the outcome of providing constructive feedback to move the writer on. As part of the writing sequence children were asked to offer feedback on their peers' writing using a predetermined or negotiated success criteria. For three different writing topics I invited other relevant professionals (two poets and a local historian) to comment on the children's writing. One of these was a celebrity poet the children had seen performing and who, having read the children's poems on the blog, conducted a Skype session in which he offered each child verbal feedback. The children regularly participated in the 100 word challenge and were given feedback from other adults and children from the UK and beyond. Certain lessons were dedicated to giving or responding to feedback from these sources as well as other classes within our school and a partner school in another London borough. Every English lesson began with ten minutes of responding to feedback on their work, and at least once a week, this was on the blog. In the spring term I established blogging buddies, mixed ability partners, to help support lower achieving children in evaluating writing and devising effective feedback.

In the summer term, the children's writing was assessed to measure progress. All children completed a post intervention survey and the same seven children were interviewed to explore changes in blogging habits and perceptions.

## 2.3 | ACTION/RESULTS

The initial data showed that many children were enthusiastic about blogging and wanted to use the blogs more for writing. At home, blogging was the third most popular online activity after gaming and watching videos. 42% enjoyed writing and 75% felt that more time on the blogs at school would help them with their writing.

The initial interviews with the seven PP children revealed that they all felt blogging would help them get better at writing but that they were unable to blog much at home due lack of computers or internet connection. When asked how the blog could help them with their writing, four main themes appeared:

- Choice
- Audience
- Sharing of ideas
- Mode of writing

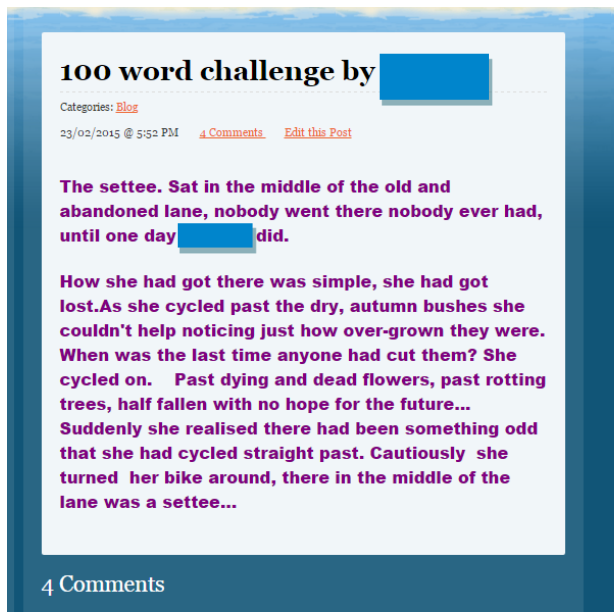
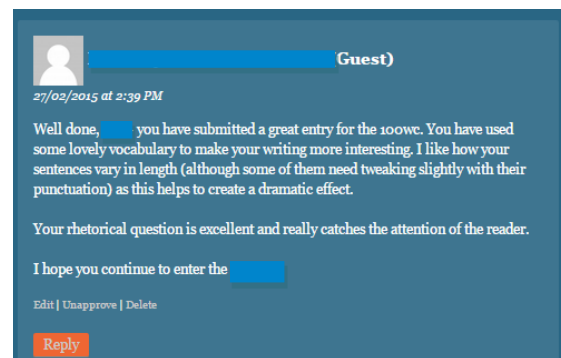


FIG. 1 AND 2 FEEDBACK FROM THE 100 WORD CHALLENGE TEAM OF VOLUNTEERS



The children discussed the enjoyment of being able to write anything they liked, being able to share their writing with their friends, receiving constructive feedback, looking at other people's writing for ideas and not having to write with a pencil. I have used

*"People who are good at writing – you can see what they wrote and see their ideas." Frankie*  
*"Reading other people's to give me ideas." Sam*

*It's like you are sharing it with your friends as well as the teachers. Teachers comment as well as we comment. It's sometimes nice to hear about what they are doing. You can magpie other people's ideas and see how other people write it and how you write it and compare. You can catch up on work you have missed." Aliyah*

*"Be more confident to let other people see what you are writing." Jordan*

Six of the seven children felt that constructive feedback on the blogs had already been helpful for their writing:

*"I enjoy getting ones that say I've done good work and ones which say I could do better because if I follow them my writing will improve." Estelle*

*"I kinda like the negative comments more because it makes you feel it's not the best you can do." Alfie*

*"Ones that give you feedback and tell you what to work on and ones that are positive – they make you feel happy." Martha*

FIG. 3 FEEDBACK FROM A LOCAL POET

**If all the world paper my version**

Categories: [Blog](#)

08/10/2014 @ 9:23 AM [1 Comment](#) [Edit this Post](#)

If all the world were paper  
I would create me with a pencil  
Draw on clothes that will suit me  
Design a job that I want

If all the world were paper  
I could make extinct animals alive  
By origami  
Make carnivores in a zoo  
So they eat dead herbivories

**1 Comment**

 (Guest)

06/11/2014 at 3:26 PM

I like the idea of drawing yourself and designing your own world! I wonder if you could write more about this, expand on the idea of what job you would have, what clothing you'd have to wear for that job, etc.

Nice work!

[Edit](#) | [Unapprove](#) | [Delete](#)

FEEDBACK ON THE CHILDREN'S BLOG POSTS WAS ALSO RECEIVED FROM A CELEBRITY CHILDREN'S POET VIA SKYPE

By the summer term, following two terms of regular blogging, attainment data showed that the class achieved 100% level 4 and above in their writing, compared with 85% in school and 87% nationally in the previous year. 57% achieved level 5 and above, compared with 44% in school and 33% nationally in the previous year. Over the course of the year, the class achieved an average of 3.4 points of progress in writing which is considered good. Of the nine children registered as Pupil Premium, all scored 2 or more points of progress, six of these achieved 4 points, which is above the class average.

Post intervention interviews revealed that although all seven the children had not increased the amount that they used the blog at home, they felt that blogging in school had helped them improve their writing. Commenting was mentioned by all children as helpful. Children also cited being able to look at other people's writing for ideas and the ability to edit easily.

*"I like to hear other people's constructive criticism of my writing for things that I can improve..." Nina*

*"I feel worse about it the first time but better the second time because I can check and edit and see if I have missed any words. It is easier to edit my writing on the blog than in my book. Comments from you and from other people like Mrs Muller were good" Alfie*

*"I used to rush all my writing and now I take my time. It's taught me how to write interesting pieces of writing that people enjoy. I liked getting comments. It was good to see a real poet look at your writing and give you ideas" Martha*

*"I can use better words now. I can write more. I can think of ideas more quickly. I can see what other people write and see if I can use the same style" Jasmin*

The research clearly shows that blogging has a positive impact on writing attainment, as well as children's enjoyment and confidence in writing. A second cycle would provide the opportunity to investigate in more depth what kinds of peer and adult feedback contribute to writing attainment and how their impact relates to initial writing ability. I anticipate that expanding this project across the Key Stage will help us understand how children's meta-learning can be developed to have a more meaningful impact on writing outcomes.

The research would also benefit from a second cycle not only as a comparative with another cohort, but to facilitate a more successful intervention drawing on the operational insight gained in this initial delivery. These insights are outlined in the recommendations that follow.



**Dear diary,**

**Early in the morning, I woke up to a horrible and wet day. It was a harsh way to wake but if it's horrible, it's horrible. Sadly (for me) I have to do the most laborious job in life (my opinion) which is to go and fetch water. Before I left I told my father that I saw a hungry, grey Wolf (he just woke up).**

**I started my journey thinking of my midday feast later on (yummy).**

**4 Comments**

 (Guest)

26/01/2015 at 5:24 PM

I really enjoyed your diary entry [redacted] and learned a lot about the life of early settlers - your description of the mud flats was brilliant! I would love to know what the job is that you think is the 'most laborious job in your life'.

[Edit](#) | [Unapprove](#) | [Delete](#)

FIG. 4 FEEDBACK  
FROM A LOCAL  
HISTORIAN

## 2.4 | CONCLUSIONS AND RECOMMENDATIONS

This project goes some way to show how classroom blogging can be a valuable tool in longer writing sequences where structured feedback and repeated editing contribute towards children achieving a high quality published outcome.

The impact and success of using blogs in this way is dependent upon a number of variables.

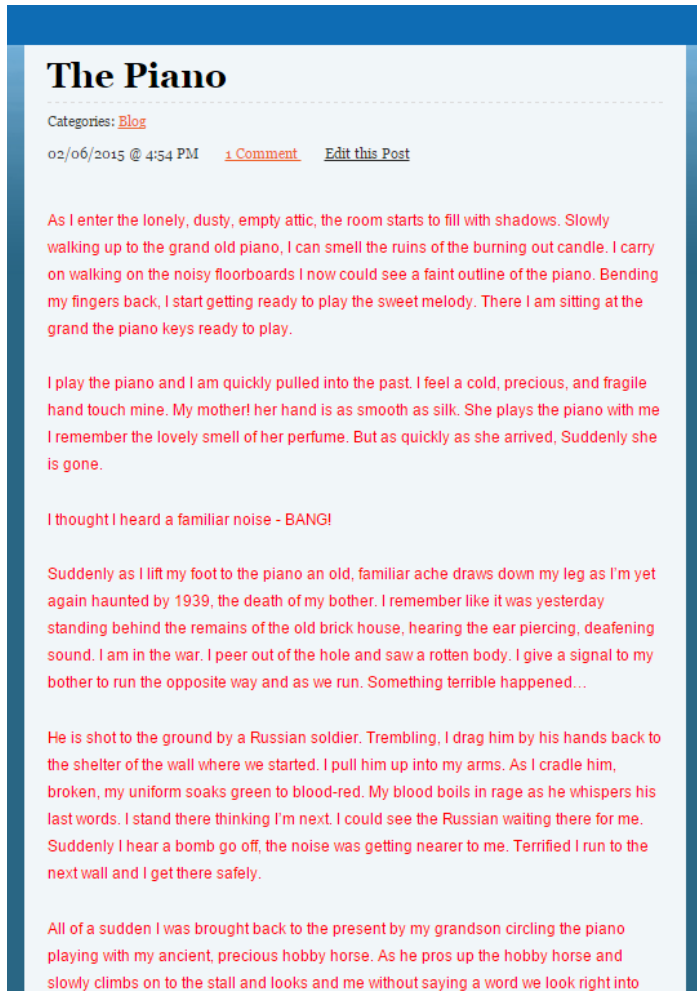
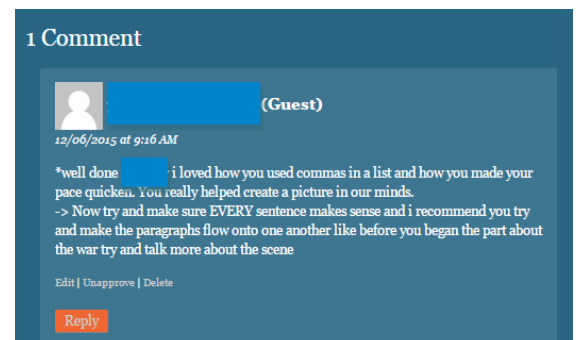


FIG.5 PEER FEEDBACK



## Technology and hardware

Many of our blogging sessions were impeded by difficulties with Wi-Fi connectivity and problems with laptops. We found that our chosen platform (kidblog.org) was not well supported by iPads which limited us to laptops only. Occasionally the laptops would take time to turn on, were not sufficiently charged or were missing; ubiquitous problems which made relying on their usage for a lesson not always possible. Recurring issues of this nature in our school made many teachers reluctant to take up blogging as a component within the weekly writing sequence.

## Time

Writing on the blogs often requires more time due to setting up, retrieving lost work, managing the issues identified above and children's underdeveloped computing / typing skills. Maintaining a commitment to the blogging routine meant that children's computing and typing skills improved; many of the children learnt how to resolve technical problems independently. However, with the constraints of the curriculum, at times using the blogs was not realistic and it was necessary to sacrifice sessions and focus only on selected writing projects. Time is also required by the teacher and others to comment on the children's writing which may be in addition to the expected feedback marking in school workbooks. It was found that approving posts within the lesson not only made efficient use of time but also offered the opportunity to instantly share and discuss on the interactive whiteboard writing in process or published pieces.

## Feedback

Integral to the successes of this project was the development of children's ability to evaluate a piece of writing and offer feedback that would effectively move the writer on to their next steps. This varied from child to child according to their own writing ability and meta-learning.

Discrete teaching around this, differentiated scaffolding to support comment writing and careful pairing of blogging buddies, were some strategies used to help develop this. In addition, seeking the right kind of feedback from outside sources proved to be highly valuable in motivating the children. Pairing with other schools sometimes resulted in informal comments without informed constructive feedback. More successful was the engagement of professional partners who not only provided an exciting audience but who offered insightful feedback.

## Recommendations

1. Healthy technical infrastructure with sufficient availability of laptops and Wi-Fi for children to use a laptop for a minimum of one hour each week.
2. Commitment to using the laptops as part of the writing sequence where whole pieces of passages of the children's writing can be published as drafts, commented on and then repeatedly edited.
3. Development of computing skills to enable children to use the blog successfully, retrieve files and manage their online safety.
4. Discrete teaching around how to evaluate writing against criteria and what makes an effective feedback comments.
5. Commitment to time for responding to feedback regularly.
6. Use of class time to instantly share and discuss on the interactive whiteboard writing in process or published pieces.
7. Partner with outside agencies or professionals (such as authors) who can inspire the children and who have the time and understanding to offer effective feedback
8. Use of existing programmes such as the 100 Word Challenge and opportunities for free writing.
9. Establish supportive blogging buddies who work together on discussing writing and composing feedback.
10. Provision of additional time in school for children who are unable to access the blog at home.
11. Realistic expectations in terms of time available for blogging in class and time required by teachers and others for commenting.

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### Useful Links

*Kidblog* - free platform for class blogs: [www.kidblog.org](http://www.kidblog.org)

*Edublogger*- blog with news and support for educational bloggers: <https://www.theedublogger.com/>

*The 100 Word Challenge* - weekly online competition with entries from around the world and an online community of teacher commenters: <http://100wc.net/>

### 3 | TO RAISE ATTAINMENT AND IMPROVE PROGRESS OF PUPIL PREMIUM CHILDREN IN WRITING. CLOSING THE GAP BETWEEN PP AND NON-PP PUPILS



**Jodie Cawte & Alison Botham**  
**Invicta Primary School**

#### 3.1 | INTRODUCTION

This aim was data driven. Not only were we aiming to improve the children's levels but we were hoping to foster a new excitement and engagement in books and writing. We hoped to make more links with home and build children's writing confidence.

##### **Planning for the project**

A PACER model was used to help map out and plan the project.

##### **Positive**

*What outcome do you want? Desired state What's currently happening? Present state*

To raise attainment and improve progress of Pupil Premium children in writing.  
There is currently a clear gap between PP and non PP pupils particularly in terms of attainment.

##### **Achievement**

*How will you know when you've got it? What specifically will you see, hear and feel?*

- \*Children participating more in class discussions / talking partners.
- \*Children choosing to write (during free time, wet play etc)
- \*Children writing more independently and generating more ideas of their own.
  - \*More pride in presentation and books.
  - \*Children talking about class books outside of class.
  - \*Children asking more questions about writing / book.
- \*Children enjoying stories and engaging with new characters and plots.
- \*Children's writing levels improve and their rate of progress is expected or above for the term of the project (and beyond).

##### **Context**

*Where do you want it? When do you want it? Who do you want it for?*

In the classroom during lesson / at playtime / at home / during writing club  
Focus = Year 2 children – everywhere, all the time, for everyone Even non PP children should benefit from PP children's engagement etc.

##### **Ecology**

*How does this fit in with what's important to you/your values? What might you also get that you do/ don't want?*

- Key Value – Everyone achieving their full learning potential.
- Breaking down barriers to learning -Working with parents – increased communication and collaboration
- CHOICE – children choosing activities and following interests and passions



## Resources

What do you need to begin? What do you need to keep going? How will you get this?

- \*The target group of children selected from both Year 2 classes.
- \*Permissions from Head teacher and parents to include their children in the club/ action research.
- \*Gather current data for selected children so we can do a comparison.
- \*Interviews with children (questions planned)
- \*Meetings with parents
- \*After-school club planned and organised
- \*Trip to the theatre booked and planned \*Funding from school for theatre trip

## 3.2 | THE PLAN: INITIAL DATA COLLECTION AND ACTIVITIES

### The Plan

- \*Permission from the Headteacher to complete the action research project in school.
- \*Interviews – with children and parents. To get a feel for how the children felt about writing / books / school. What they love to do at school and home and things they don't like so much etc.
- \*A weekly Writing Club – a special feel with lots of fun and aimed at engaging the children and making them want to talk / read and write. Lots of fun activities that were linked to our work in school to consolidate but in a subtle way so that the children didn't realise and there was still choice involved in our clubs.
- \*A theatre trip – the key stimulus and 'hook' of the club and project. These children are often the children who don't have the rich experiences to draw on when writing so experiencing something real and special was at the heart of this project.
- \*Links with home – encouraging parents to engage with school and learning and support their children. These links were also established to gain permissions from the parents for the children to attend the writing club.

## 3.3 | ACTION/RESULTS

### Interviews

The interviews with the children were interesting, useful and revealing. The majority of children said they felt 'anxious' or 'nervous' when it was time to write and that they did not want to write without support or help.

All but one child said they did not read or write regularly at home and neither did their parents. Over half the children showed a strong interest in music, tv and film.

From these interviews it was clear the children lacked confidence in their abilities as writers and were de-motivated by writing at school. The idea for using a popular, funny and 'grown-up' feeling Roald Dahl text to study alongside a trip to the theatre was born!

We decided on informal group chats with parents rather than interviews, which we felt might be intimidating or difficult to actually arrange. We told the children, sent a text to the parents and even sent an informal letter to arrange a quick chat before pick up one day with tea and biscuits. Two parents showed up and one of those was 'poached' from the playground and oblivious there actually was a meeting. This highlighted to us the issue of communication and collaboration with this particular set of parents and was quite telling alone. We arranged another meeting and really publicised the theatre trip as a 'carrot'. This time we got all of the remaining parents attending except one. The parents confirmed the children's interests (popular tv shows and characters, film and music) and were excited about the prospect of the trip. We worked hard to avoid parents feeling they had been singled out because there was an issue or problem.



### The Writing Club

The writing club itself took place every Thursday after school and was designed to be different, special and fun. The children were all given their own book to decorate, and although we always discussed all writing together, their books were not marked.

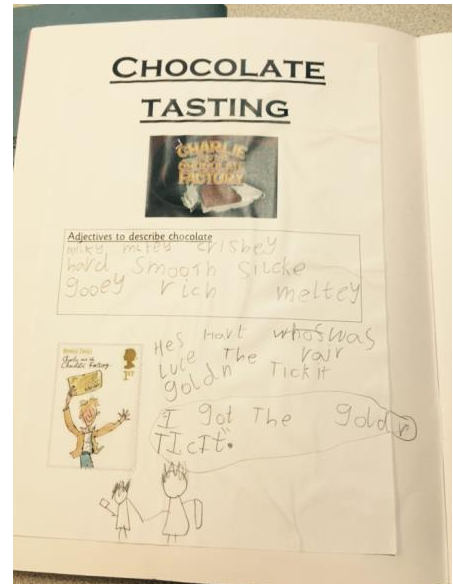
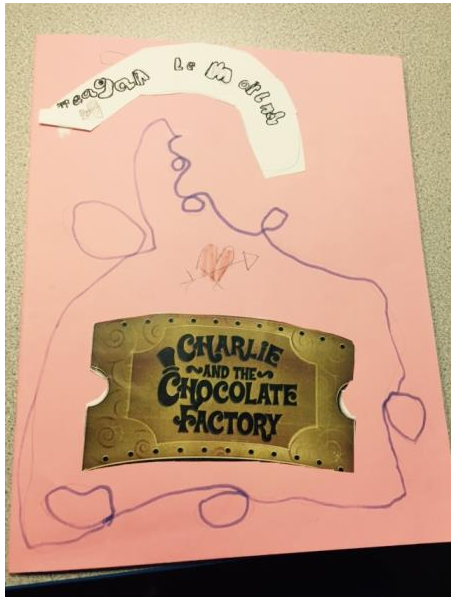


FIG.1 PUPILS' BOOKS

From the outset the children knew we were reading Charlie and The Chocolate Factory and that we had an exciting theatre trip planned. An exciting and accessible pop up version of the book was purchased to share with the group, which the children loved.



FIG.2 POP UP BOOK

The children were all issued with golden tickets to generate excitement!



FIG.3 GOLDEN TICKET

We had a few weeks before our trip to explore the book and a few weeks after. The children had a key role in choosing what they wanted to do and how. It was steered where possible to link with our class work and consolidate their learning but the children did not realise this was the case as it was done in a very different way.

Activities included chocolate tastings, diary entries, recounts, recipe writing (we made chocolate cakes) etc. Children were writing independently, composing their own ideas and sentences and choosing to do it without pressure. Gradually confidence and quality of work improved.

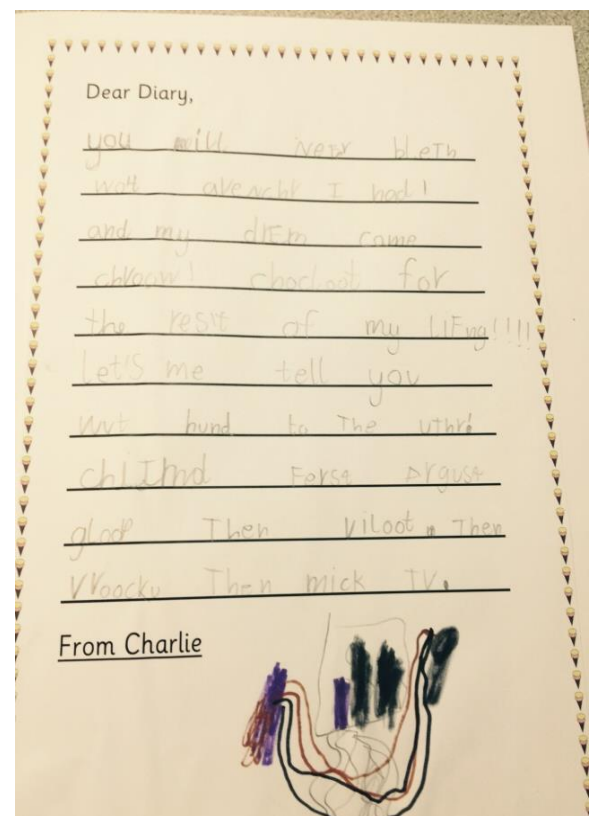
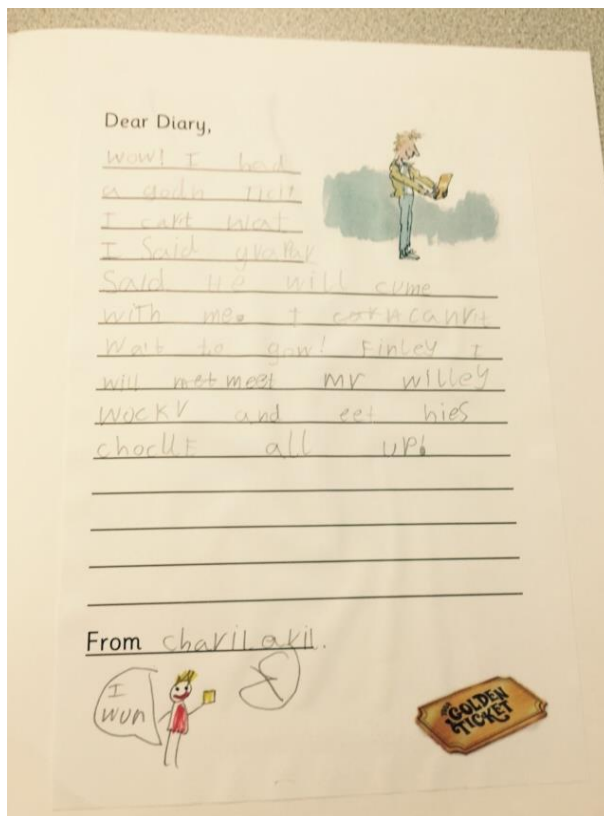


FIG.4 PUPILS' WRITING

Children's confidence and engagement appeared to really soar and it was clear how much they were enjoying being a part of this special club. We completed an activity in another lesson about things we are best at / proud of and nearly all the writing club children mentioned being a part of this special club. It was a badge of honour for them and something to be treasured.

Quotes from the children about the club included:

'I love writing club, it's a special club and we do fun things.' 'Writing club is the best thing in school.'  
'We do lots of fun stuff at writing club, and we do some writing.'

The Theatre Trip itself was a huge success and for most of the group their first experience of the West End and theatre. It was a special trip and a memorable experience.

Children said:

'The trip was really fun and I got to see the story on the stage – I was excited to go and do work on the show and story after.'

Soon, the quality and quantity of work in class was also improving with children generating more of their own ideas and writing more independently and enthusiastically.

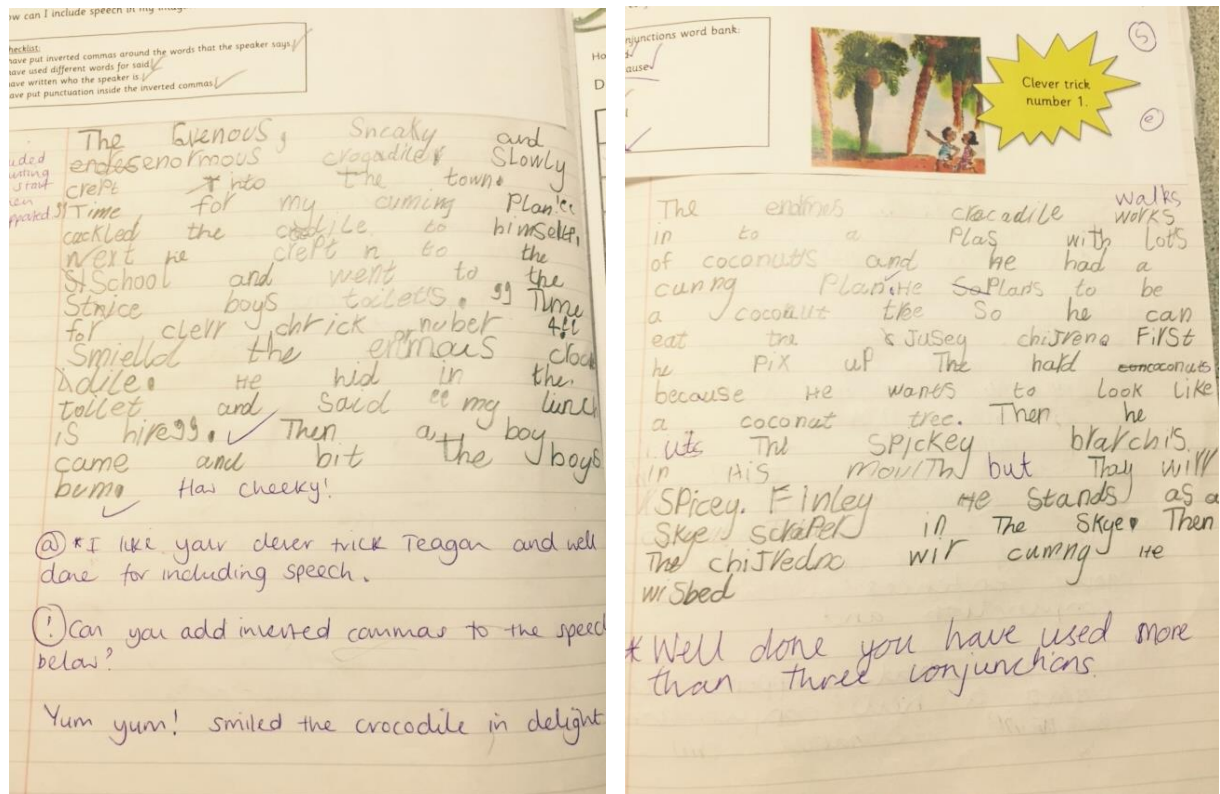


FIG.5 PUPILS' WRITING

### 3.4 | CONCLUSIONS AND RECOMMENDATIONS

12 children selected for the project 4 boys and 8 girls

Data at the start of the project (from Year 1 end of year): Writing ATTAINMENT - 16% are above expected for APS (average point score) 33% at expected for APS (average point score)

50% below expected APS (average point score)

Data this year: Writing Attainment at end of Year 2 of the 80% at expected, 20% are above expected for APS 80% are at expected or better APS 20% are below expected APS

Progress this year

Of the 67% who have made expected or better progress, 47% have made above expected progress 67% have made expected or better progress 13% have made below expected progress (one with SEN). From this data we can see that attainment on the whole is not an issue for this group in writing and the gap between their attainment and their peers is closing rapidly. There has been a significant shift to show more of this group achieving at or above expected attainment following this project.

Progress has been accelerated amongst this group to close the gap between these pupils and their peers, though more still needs to happen for those children who have not made expected progress this year and this will be followed up in 2015-2016.

Writing Club was only for one term due to the member of staff running it taking maternity leave. Other interventions filled the gap for most of the children in this group and there were more additional writing opportunities presented to all the children in school to encourage children to write at home and take more ownership in their writing, for example graffiti artists working with children to include their poetry on the playground walls.

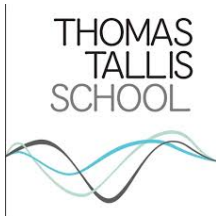
The children in this group were starting to get into the flow when the writing club finished for the term. We believe that with blossoming confidence which the club helped to foster we would have seen more and more from them and hopefully this would have had even greater impact on their progress and attainment.

This project was a short-term success but to reap the benefits even more, especially in terms of data and attainment, it needs to run for longer than one short term as the children were just getting into their stride.

In terms of the children's attitudes towards writing and their confidence it was hugely successful. Interviews conducted at the end of the project showed the difference in children's outlook and approach to writing shifting and becoming much more positive in 100% of cases. When asked how they felt when they were about to write they said 'excited' and 'full of ideas', a contrast to the feelings of nerves before the project.

Going forward it appears that projects like this can make a difference. We believe that implementing this kind of approach earlier in the year and continuing it for longer, in order to really work with the children and develop their confidence and enthusiasm for writing and wider aspects of literacy would result in even more positive outcomes for the children. We would also be able to gain a better understanding through closer tracking of their work and attainment how this approach impacts on pupil progress.

## 4 | IF I ADOPT A COGNITIVE ACCELERATION APPROACH TO MY YEAR 7 TEACHING, WILL THIS IMPROVE THEIR ABILITY TO THINK WHEN POSED WITH A CHALLENGE?



**Suzanne Tomlinson**  
**Thomas Tallis Secondary School**

### 4.1 | INTRODUCTION

**Context:** The research was conducted in Thomas Tallis secondary school in Kidbrooke, South East London. The focus of the research was year 7 science pupils. Two classes were used in different ability sets (set 1 and set 4) to see if the impact was dependent on ability. The research was prompted from observations made when visiting a primary school in the local area.

**Issue: What did you notice that wasn't working properly? What was your hunch about this?**

After completing some recent outreach work in a local primary school I was amazed at how independent and inquisitive these pupils were. When reflecting on this experience, and comparing to my experience as a secondary teacher, I started to wonder why our students often lack the ability to work independently, especially when faced with a challenge. For example, when teaching my low ability year 10 class they are reluctant to complete work independently and constantly ask for teacher reassurance when completing written or practical work. As a result, they are deskilled in thinking and persevering with challenges and find assessments daunting and overwhelming. I feel that this is possibly because we have not stretched and challenged students to develop the cognitive strategies needed for a scientific reasoning. As teachers, we often seem to struggle with this most when students enter key stage 4, however, I feel that if we focused on developing these skills at key stage 3, and maintaining the inquisition they develop at primary school, then this should have a knock on effect when the students enter key stage 4. In attempt to tackle this problem facing our key stage 4 students I adopted a cognitive acceleration approach to teaching with my year 7 pupils.

### 4.2 | METHODOLOGY: COLLECTION OF INFORMATION TO INFORM ACTION

**What did the research say? Books, blogs, colleagues etc.**

Most of the literature into cognitive acceleration focuses on the most popular programme; CASE (Cognitive Acceleration through Science Education). This programme was developed by Adey and Shayer and it is formulated from the work of Piaget and Vygotsky. Piaget theorised that children's cognitive abilities develop in stages meaning that they are unable to complete higher level cognitive tasks when in a lower stage of development. Vygotsky said that for learning to occur children need to be given tasks which are in the zone between what the child can already do and what they can only do with the help of an adult. This was called the zone of proximal development. The aim of the CASE programme is to increase the ability to think, in order to address a mismatch between the demands of the national curriculum and the cognitive thinking capabilities of students, therefore the focus of the programme was to accelerate the natural cognitive development of students so that they can think at a higher level (Adey, 1999).



The programme is based on 5 principles and from this a series of lessons has been developed which incorporates each of these principles. The first principle is cognitive conflict which is where students encounter a problem which they cannot immediately solve themselves. The second principle is concrete preparation which prepares students to tackle problems by introducing the necessary language, and setting the context of the problem. This requires learning to be set within Vygotsky's zone of proximal development and not within the child's current capabilities. In order to solve the problem set the student must construct their thinking for themselves using appropriate questioning from the teacher, this is the third principle of cognitive acceleration; construction. After constructing their learning and thinking, the student must go through a phase of metacognition, the fourth principle. This is where they reflect on how they solved their problem and what difficulties and resources they needed. Finally, students engage in the last principle; bridging, where they must link their thinking to other areas of learning and science (Adey, 1999). In the CASE material a series of science lessons has been developed around these 5 principles which are to be taught alongside the national curriculum over a period of approximately 2 years. It is not a replacement for the science curriculum but has been developed to enhance learning.

There have been many studies which have assessed the impact of CASE on student progress. For example Adey and Shayer (2011) carried out a review of studies using CASE and found that not only does using CASE at key stage 3 improve student's level of cognitive development within the key stage there are also transfer effects on GCSE performance, not only in science but also in maths and English. Other studies have also been conducted on the equivalent programme in maths (CAME- cognitive acceleration in mathematics education) that had similar effects on both key stage performance and GCSE achievements (Shayer and Adhami, 2006). In addition, studies have been conducted in other countries which also found promising results. One study conducted in Malawi by Mbanjo (2003,) where it was identified that there was an issue with poor performance in science due to a mismatch in the cognitive abilities of their students and the cognitive demands of science education, found that using CASE improved both the cognitive levels of the students and science examination results. Some of the reasons cited for the improvement found were: CASE forces students to think deeper and faster; there is a focus on practical work; a change in perception of students as active learners and; an improved level of student participation causing them to be more critical, argumentative and independent. Another study conducted in Ireland by Maume and Matthews (2000) aimed to solve the problem of students not understanding their teaching. They used a modified version of CASE where the whole programme was delivered in 1 year rather than over the suggested 2 years because of issues with time allocation. Using tests of science reasoning they found that students had improved over the 1 year intervention suggesting it is possible to implement CASE in a 1 year time scale. On interviewing students it was suggested that CASE lessons were more enjoyable whilst improving student's ability to think and understand.

Despite there being a wealth of material to suggest the benefit of using the CASE programme, it is often not adopted by schools, most commonly because the lessons do not necessarily follow the national curriculum and so poses the risk of "wasted" science teaching time (Adey, 1999). In a busy school environment where there is often pressure on teachers to produce results it can sympathise that it may be off putting to teachers and heads of department to introduce a programme which is not directly teaching subject content. This is an issue I have tried to address in my action research. Starting the research part way into the year meant I was unable to implement the CASE programme, also it seems as though there has been a wealth of research already conducted on the effectiveness of CASE. Therefore, I instead intended to use the principles of cognitive acceleration and adopt these in my year 7 teaching. Below, I have described how I did this, using an example lesson.

### Research question and description of the project.

As previously mentioned there is evidence to suggest that using the CASE programme improves pupil performance at key stage 3 and has a long lasting impact at key stage 4 (Adey and Shayer, 2006). However, teachers cite issues such as time as a reason for not using the programme in their teaching (Adey, 1999). In addition to this, I was unable to change the structure of the curriculum part way into a year. Therefore, I attempted to adopt a style of teaching which incorporates the key principles of CASE, but covers the topics set out in my routeway and the national curriculum. In order to explain this I will give an example of a lesson which demonstrates how the principles are used. The aim was to see if this improved thinking in my year 7 class when students are posed with a challenge.

Stage	How used	Example from seasons lesson
Cognitive conflict	Cognitive conflict is introduced in a lesson by posing students with a focus question/problem which the lesson aims to solve. It must be pitched so as to address a misconception or be unsolvable until the end of the lesson. They are required to attempt to answer this at the beginning of the lesson in order to formalise their current thinking.	In a lesson on the seasons students were asked: "how do we get different seasons?" This question was chosen specifically because commonly students incorrectly believe seasons are a result of the Earth's distance to the sun.
Concrete preparation	Feedback from their initial ideas is gathered by the class teacher and any required terminology is outlined. Students are then introduced to equipment that can be used to solve the target problem.	Equipment (squared paper, a torch, a large protractor and a digital thermometer) was provided to tackle the seasons problem. This was shown to the class and the students suggested what each piece of equipment could be used to represent and how it could be used to investigate seasons. Students were also provided with information on the angle of the sun at different times of the year and qualitative descriptions of each season was recapped.
Construction	Students are given time to experiment with the equipment or resources provided with limited teacher input. Rather than giving out a method and telling the students what they have to do, more flexibility is given to the students to allow them to discover their own way of solving the problem. The role of the teacher is to circulate and question the students on what they are doing and where they have got to in the problem solving process. If students are struggling the teacher can provide prompts on how to further their problem solving. Students are encouraged to work collaboratively and use their peers to support their learning.	In the experimenting time students attempted to discover how the angle of the sun (the torch) affected the number of squares covered on the paper (the Earth) and how the temperature varied when the angle of the torch was varied. The challenge came when discovering that there are more squares covered in winter than in summer, suggesting more light and more heat. However, the temperature was lower when more squares were covered. In order to solve this students needed to understand concept of inverse proportionality and realise that the same amount of heat is coming from the torch but when concentrated over a smaller area the temperature will rise giving us summer. To support this process the teacher encourages peers to suggest answers to student's problems and probes students to look at what is happening to the temperature. Analogies such the sun's light being like a spot light in summer can be used to support student's understanding and problem solving.
Metacognition	After time to complete the experimenting has finished students are then asked to write a conclusion of their findings and as a class the teacher leads a discussion into how groups solved the problem and what conclusions they drew. Students are then referred back to their original focus question/problem and asked to answer again using the knowledge gained from the lesson.	At the end of the practical students are selected to share their findings. Class averages about the number of squares and temperature readings can be generated to show the pattern more clearly for students who had inaccuracies in their method. Students who faced challenges in solving the problem are invited to share their experiences and explain how they came to a solution. Students are then referred back to "how do we get different seasons"
Bridging	Previous lessons are referred to in subsequent lessons to encourage pupils to use techniques developed in solving other problems.	The methods used and the problem solving technique is used across a range of lessons so that students become more competent at using their problem solving skills in new situations.

TABLE 1 STAGES OF COGNITIVE ACCELERATION

### 4.3 | ACTION/RESULTS

#### **Findings. What did you discover when you analysed your qualitative and quantitative data?**

Primarily data came from analysing the experiences in class as a teacher and evidence was gathered from the conversations had between pupils and their peers, and pupils and myself. I was looking for evidence that students were actively problem solving and engaging in the construction phase during the lesson. Evidence was also collected by looking at the responses to the focus questions in books to see any changes in thinking. In addition quantitative data was collected by analysing test scores at the end of the 2 units covered since initiating the research and comparing these to the test score obtained in the unit prior to starting the research. Therefore, this section will be split into three sections: student conversations; focus questions and test scores. For consistency the student conversations and the focus questions evidence will come from the seasons lesson outlined above.

#### ***Student conversations***

##### *Quote 1:*

*"In summer it is like a spotlight, more focused but doesn't cover as much"*

This quote is an example of a student using an analogy to answer the question "what is the sunlight like in the summer". There was no prompting to use an analogy but it demonstrates that the pupil is using his/her experiences to explain the problem at hand and develop their own thinking.

##### *Quote 2:*

Question posed by student 1: *"why is the equator hottest when it is in the middle?"*

Response suggested by student 2: *"It is because it is always at the same angle. The sun is always directly above you so it is always pointing at you."*

This quote demonstrates the cognitive conflict experienced by student 1 and the use of peers to solve their conflict and resolve understanding in the construction phase.

##### *Quote 3:*

*"The angle of the Earth makes the sun look different(ly)"*

This quote demonstrates the beginning of a student attempting to resolve their misconception that it is the distance from the sun which causes the change in seasons. They have not started to notice that it is to do with the angle and so are forming their own thinking.



**Focus questions**

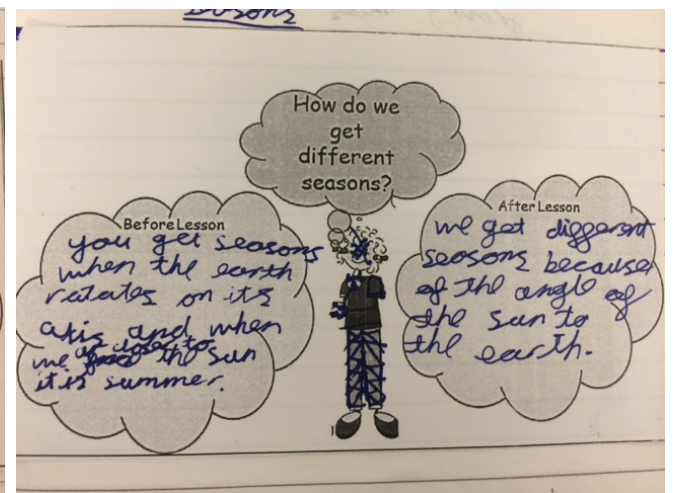
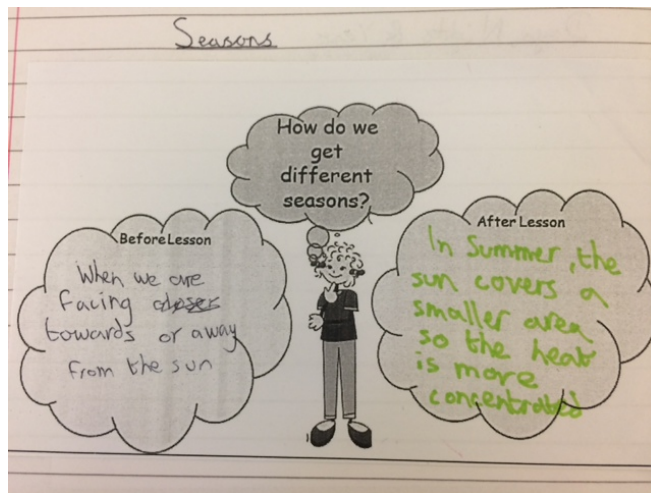
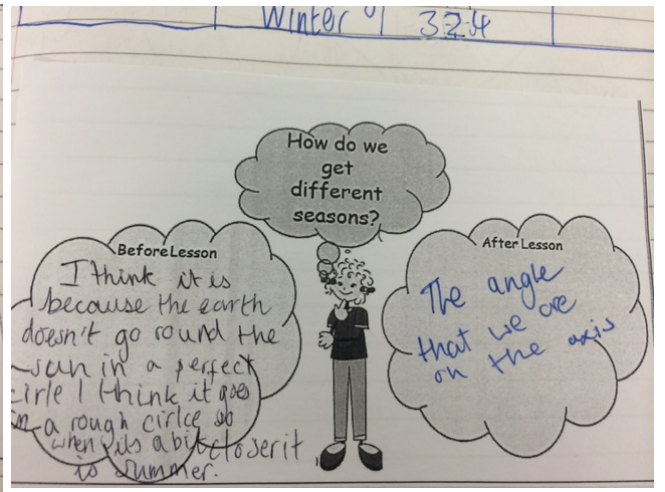
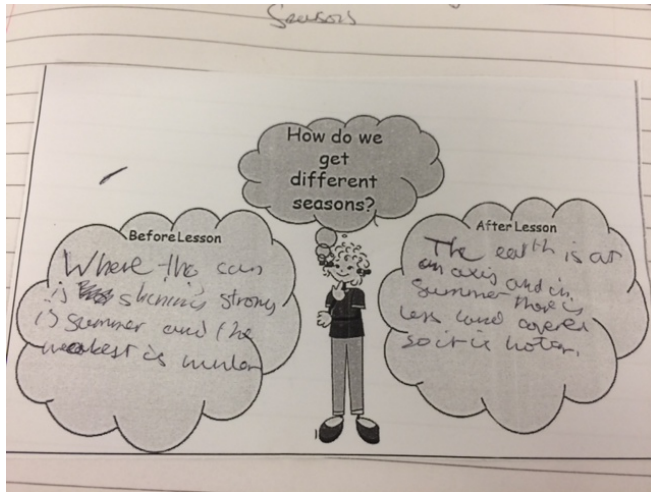






FIG.1 PUPILS' WORK

**Test scores**

Student test score analysis is shown below, names have been removed for student confidentiality.

Key:		Decreased level
		Level maintained
		Increased by 1 sub level
		Increased by more than 1 sub level

## Set 4 class

student	particles and solutions	space and forces	chemical reactions
1	4c	5c	4a
2	3b	5c	4b
3	2a	3a	2a
4	4c	4b	3c
5	3b	5c	4c
6	4c	5b	4c
7	4a	5c	3c
8	4b	4b	4c
9	4b	5b	4a
10	3a	5c	3b
11	4b	5c	4c
12	5c	4c	3b
13	4c	5c	4a
14	5c	4c	5b
15	5b	4b	5c
16	3c	4b	3a
17	5c	5b	5b
18	4a	5a	4c

## Set 1 class

student	particles and solutions	inheritance and ecology	chemical reactions
1	6a	7c	6b
2	6a	7b	6c
3	6b	6b	6b
4	7c	7c	6a
5	6a	6a	6b
6	7c	7a	6b
7	6c	6c	6b
8	6a	7c	5b
9	7c	7c	7c
10	6a	7c	6a
11	6c	7c	5b
12	6c	6b	5b
13		5a	5c
14	6c	6a	6c
15	5a	6a	5a
16	6c	6c	6b
17	7b	6a	6b
18	6a	7c	5a
19	6c	6c	5b
20	7c	7c	6a
21	5a	6c	6c
22	7b	7b	6b
23	7c	6a	6a
24	6b	6b	6c

	Set 1 class (%)	Set 4 class (%)
Improved by at least 1 sublevel	70	64
Improved by more than 1 sublevel	47	44
Score stayed the same	17	8
Decreased by at least 1 sublevel	13	28

FIG.2 TEST PERFORMANCE OF IN EACH CLASS BY PERCENTAGE.

The quantitative data suggests that most pupils have improved levels since introducing a cognitive acceleration approach. This seems to be slightly greater for the set 1 class with the set 4 class suffering a higher percentage of students who have had a decrease in level.

#### 4.4 | CONCLUSIONS AND RECOMMENDATIONS

##### **What have you learned? What do you still feel inquisitive about?**

Generally, the use of a cognitive accelerated approach seems to have a positive impact on the learning of the children in my year 7 classrooms. The number of conversations which are focused around students developing their understanding and developing their own thinking has increased and the impact on test performance seems, on the whole, positive. In recent observations teachers have noted the positive learning environment in the classroom and the improved level of engagement from my students, therefore, encouraging me to continue to adopt this methodology. As a teacher, it has also improved my experience in the classroom. I find myself doing less work in the classroom and my students more actively engaged in their learning which gives me pride over my teaching and allows me to see my students flourish and even develop the inquisitiveness to ask questions that are beyond the learning of that lesson and link previous lessons and their real life experiences. Students appear to enjoy their science lesson, particularly developing their practicals. One student even recently commented: *"I actually get science now, I used to not understand"*. There seems to be little difference in the impact depending on ability, however, with a less able group more structure has been needed to develop the confidence for them to create their own practical investigations. These skills have been slowly built up by using the whole collaboratively devise a method before students access and use the equipment. Gradually, this support has been lessened and students are beginning to become more capable at coming up with their own methods in small groups. In addition, it is important to note that the focus questions need to be pitched accordingly depending on the ability of the students. Students need to be posed a question they cannot immediately answer accurately, but one that is not so challenging that it becomes a barrier to students. This can involve some assumptions being made by the class teacher about prior knowledge, especially when starting a new unit.

Although a cognitive accelerated approach has shown beneficial as a teacher and on student's thinking skills, it is not possible to definitively conclude that it is my change in teaching style and lesson structure which has prompted this change in attitude and test performance. In a classroom there are a whole range of factors which can influence students on a day to day basis. Furthermore, as the research was conducted over a relatively short time scale, and only a small selection of topics were taught using this methodology it may be that the subject content impacted on the results gained. Also, as these students are currently year 7 and are likely to be subject to different science teachers next year (who may not favour this approach) it is not possible to track whether the cognitive acceleration approach has an impact on their GCSE performance. However, this small scale study has led to a change in my teaching style and way of thinking about my students. Having spoken with other science colleagues, the principles and methods I have used have prompted a reflection in their own teaching styles and they are inquisitive about trialling some of these techniques in their classrooms.

One principle, in my approach, which I still feel needs some development is the bridging aspect. It is difficult to promote this in students without a cross curricula approach. This is something I would aim to develop to see if there are any benefits across the curriculum.

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## 5 | WHAT CAN BE DONE TO HALT THE DECLINE IN READING FOR PLEASURE WITH STUDENTS MOVING FROM YEAR 6 INTO YEAR 7?



**Angela Smith**  
**The John Roan School**

### 5.1 | INTRODUCTION

The decline in reading for pleasure with students moving from year 6 into year 7 is reflected nationally and the results of the first element of my research also reflect a national trend which needs to be reversed if we wish to see standards of literacy improve and enable all students to access the curriculum and reach their full potential in their academic studies and for their success and life chances in the future.

### 5.2 | METHODOLOGY: COLLECTION OF INFORMATION TO INFORM ACTION

One hundred and nineteen Year 7 students completed a questionnaire at the end of the Autumn Term (67 boys and 52 girls)

I then went to the Head of our PE department to get some advice on which statements and students' responses would be most helpful from a cross curricular perspective as part of my presentation and staff CPD in February 2015.

We chose the following five statements: "I enjoy reading in a small group."; "I would like more help with my reading and writing."; "The books I read at school are interesting."; "I like to use the Internet." and "I like to read other texts as well as books, for example, magazines, comics and newspapers."

The staff were divided into groups of five. Each group was allocated one of the five statements. They had to respond to specific questions on each statement from the following three perspectives: as a classroom teacher, as a form tutor and as a whole school.

#### **Statement One: "I enjoy reading in a small group."**

1. What does this tell us about the students' attitude to reading?
2. What do we already do as a classroom teacher, a tutor and whole school to encourage a love of reading?
3. What could we do to encourage more of our students to develop a love of reading as a classroom teacher, a tutor and whole school?

#### **Staff Responses and Suggestions**

It is clear from the survey that a number of students do not see reading as a central part of their daily lives. As staff, we need to be constantly promoting reading in a positive way. So, for example, when it is "silent reading time" during registration, tutors could set aside the last ten minutes to have a whole class discussion about the books the students are currently reading.

It was also emphasised that leading by example was absolutely crucial: tutors should be reading their current reading book at the same time. This also helped to promote the message that the English department do not hold the monopoly on reading books: reading is something that is an enjoyable and positive activity that everyone should experience on a regular basis. On a whole school level, continuing to invite a variety of authors, illustrators and publishers into the school and helping to promote the librarians break and lunchtime activities.

**Statement Two: “I would like more help with reading and writing.”**

1. With over 80% of the Year 7 students thinking that they either don't want any help or only a little bit of help with their reading and writing, what does this tell us about the depth of feedback we are giving them when marking for literacy? When considering this question, you will want to think about the standards of literacy in your students' writing.
2. What do we already do to ensure that the students do recognise the need to further improve their reading and writing as a classroom teacher, as a form tutor and as a whole school?
3. What more could we be doing to ensure that the students do recognise specific aspects of their reading and writing skills which do require improvement in order to improve attainment in all subjects as a classroom teacher, as a form tutor and as a whole school ?

**Staff Responses and Suggestions**

It was felt that it was a cause for concern that so many students did not feel that they needed more help with their reading and writing. The whole school marking policy was raised because a lot of staff said that if they marked for literacy, they did not have time to mark from a subject specific perspective. As Literacy Leader for the school, I raised this with my line manager at our next meeting. It was decided that, from September, staff would just be expected to identify incorrect spellings, grammatical errors etc. by using the codes of the Whole School Marking Policy, such as SP for spelling, but NOT doing the corrections for the students. One lesson is to be set aside for students to do their own corrections on a designated Green Pen Day. For example, one lesson could be a “Green Pen Dictionary Day” when students use a dictionary to find the correct spelling for a word identified with “SP”. I am putting in a bid for additional finance to purchase a class set of dictionaries for every department to enable them to have “Green Pen Days”. It was felt that this would also help the students to learn more successfully from any errors if they had the responsibility of correcting them.

**Statement Three: “The books I read at school are interesting.”**

1. 53% of our Year 7 students say that the books that they read in school are not, or only a little bit interesting. How does this statistic inform the way we teach?
2. What are we currently doing to ensure that our texts try to engage the students as a classroom teacher, as a form tutor and as a whole school?
3. What could we do in the future to ensure further success with this as a classroom teacher, as a form tutor and as a whole school?

Some staff felt that it was not the text books that were necessarily wanting but, maybe we needed to consider more carefully how the text books were utilised in lessons. Some subjects are limited by curriculum criteria. There was also the sad reality of the cost of buying whole class sets of new texts.

**Statement Four: "I like to use the Internet"**

1. With nearly 90% of the students stating that they like to use the Internet, how could we encourage them to use this access to improve their reading and their writing?
2. What are we currently doing to ensure that we encourage our students to use the Internet as a means of improving their reading and writing as a classroom teacher, as a form tutor and as a whole school?
3. What could we do in the future to ensure that we encourage our students to use the Internet as a means of improving their reading and writing as a classroom teacher, as a form tutor and as a whole school?

It was agreed that we need to allow the students more access to reading via the Internet with investment in tablets. It was agreed that this would allow weaker readers to access suitable texts without their peers knowing they were reading a lower ability text. Tablets would allow students to access Kindles which would be very helpful to students from poorer backgrounds. They would also enable them to access a wide variety of text types.

**Statement Five: "I like to read other texts as well as books, for example magazines, comics and newspaper."**

1. With over half the students stating that they either read from other texts types "a lot" or "definitely", how could we use this result to inform our planning of lessons and tasks set?
2. What are we currently doing to incorporate different text types into our teaching as a classroom teacher, a form tutor and as a whole school?
3. What could we do in the future to incorporate different text types into our teaching as a classroom teacher, a form tutor and as a whole school?

As a result of this, I am creating, not only book boxes, for tutor bases, but also magazine boxes so that students can access a wide variety of text types and read about subjects which interest them. Hopefully, this will result in them finding that they do find reading enjoyable when it is concerning a subject which interests them.

**Interviews with Groups of Year 7 Students**

Having decided on an action plan based on feedback from staff, I decided to interview students from my two Year 7 classes in groups of four. I told them what initiatives I was going to put into place as a result of the survey they had completed.

1. They responded very positively to the idea of book boxes and magazine boxes. Here is a sample of some of their comments:

"I have no books at home and I've lost a book that I borrowed from the library so I can't get another one out til I find it – so I'd love a book box."

"All my friends have a tablet but mum says she can't afford one so I'd really be happy if I could have one in school!"

"I don't like books but I'd read comics and some magazines."

"I don't know how to use a dictionary." My response was: "You are not the only one! Just as well we are going to have a Green Pen Dictionary Day."



### 5.3 | ACTION/RESULTS

#### The Action: Promoting Reading for Pleasure World Book Day March 2015 and Guess the Literary Character

This was just one of the many activities in which staff and students were involved during the first week of March and on Thursday 5<sup>th</sup> March – World Book Day.

Students were given a list of famous literary characters and they had to guess which member of staff was which literary character.

There was a prize for the student in each year group got the most correct answers!



FIG.1 WORLD BOOK DAY - PHOTOS



## The John Roan Book Week 18<sup>th</sup> to 22<sup>nd</sup> May 2015

Here is the article I wrote for our literacy webpage and The John Roan News. I've added some photographs too.



FIG.2 THE JOHN ROAN BOOK WEEK - PHOTOS

On Wednesday 20<sup>th</sup> June, Steve Barlow and Steve Skidmore aka The Two Steves arrived at Maze Hill to meet the whole of Years 7 and 8. It was fantastic to see the beautifully refurbished main hall at Maze Hill filled to the brim – the balcony included - with excited students waiting with great anticipation to meet The Two Steves.

The Two Steves met when they both were teaching English and Drama. Whilst working together in the teaching profession, they decided to have a go at writing books collaboratively with a view to encouraging reluctant readers to engage with books and develop a love of reading. They have achieved this desirable goal with many young readers, not only in this country, but in many countries worldwide.

The Two Steves entertained and engaged over four hundred students for a whole hour! Through the use of humour, they got across three vital and, potentially, life-changing messages: reading is great fun, reading makes us successful writers, having excellent literacy skills enables us to be successful in our work and have high self-esteem.

The show ended with all the students joining in with one of The Two Steves' interactive books in which the reader has a say in the outcome of the story. The students all got really involved and were obviously very disappointed when it came to the end.

The Two Steves spent break time with students in the library at Maze Hill: they signed some of their books which students had bought prior to their visit; other students bought a book directly from The Two Steves and also had them signed.

During periods three and four, The Two Steves did two creative writing workshops with members of the Creative Writing Club and other students who love to write and who were selected by their English teachers. The Two Steves provided very clear guidance on how to become successful, creative writers with their usual humorous and entertaining style.

The Two Steves have a brilliant interactive website <http://the2steves.net/> I warmly recommend their website to all our students where they can find out much more about them, their books and also get loads of ideas about becoming successful writers.

Staff and students alike thoroughly enjoyed The Two Steves' visit and we look forward to them returning for next year's John Roan Book Week.

Friday 22<sup>nd</sup> May 2015

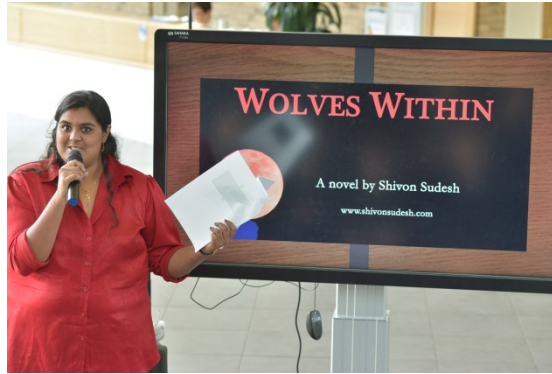


FIG.3 SHIVON SUDESH

On Friday 22<sup>nd</sup> May, local author Shivon Sudesh, who visited our Year 7 and 8s last December, very kindly agreed to come back and meet our Year 9 students at Westcombe Park. For those who may not have read my article about Shivon's last visit, she is completely inspirational! Shivon and her family arrived in this country ten years ago. Shivon could not speak a word of English when she came to England. However, ten years on, she has just completed her second year at King's College, London. Last year her first novel, *Wolves Within* was published. *Wolves Within* is the first in a trilogy; Shivon is just over halfway through writing the second novel in the trilogy. Having read *Wolves Within*, I personally cannot wait for the second installment!

Shivon gave a talk during period one to the whole year group explaining how she learned to speak, read and write in English. Not surprisingly, it was through reading very simple picture story books to begin with and progressing from there. She then talked about the type of literature that she loved and how that informed and inspired her own writing. She then explained the background to *Wolves Within* and showed a promotional video which acts as the prologue to the novel.

Shivon and her sister, Roshin then ran two creative writing workshops with students in Year 9 who have a passion for creative writing and who are keen to develop their writing skills. Shivon and Roshin provided some brilliant activities for the students who were working in groups and who came up with some outstanding work most of which Shivon took away with her as a memento. The talk which Shivon gave to the whole year group was inspirational to everyone and a huge encouragement to those of our students whose first language is not English.

While the Year 9 students were enjoying meeting Shivon, students in Years 7 and 8 were having a wonderful time meeting the illustrators, cartoonists and children's authors, Knife and Packer at Maze Hill. Ms Allen, the school librarian invited them in and she has kindly provided a report on their visit.

## Knife and Packer's Visit to The John Roan



FIG.4 KNIFE AND PACKER'S VISIT TO THE SCHOOL

The famous cartoonists and children's authors Knife and Packer, the creators of *Fleabag Monkeybag* and *Captain Fact* as well as the *It's Grim Up North* cartoon strip in *Private Eye* ran cartoon workshops throughout the day with specially selected students in Years 7 and 8. During the workshops Knife and Packer worked with the students to create new cartoon characters such as *Super Hammond* which was inspired by a book about Top Gear's Richard Hammond. They also showed the students how they could draw these characters themselves. There was even an appearance by the infamous *Fleabag Monkeyface*.

It was a fun day for all of those involved and some very impressive cartoon artwork was created by the students which will soon hopefully be going up on display in the library at Maze Hill - Ms Allen

The feedback from staff, who kindly supervised students involved in the authors' shows, talks and workshops, and, most importantly, from the students themselves has been incredibly positive. My thanks go to the English department and Ms Allen who worked incredibly hard promoting and helping to organise the events for The John Roan Book Week.

## 5.4 | CONCLUSIONS AND RECOMMENDATIONS

I passionately believe that these types of extra-curricular events are crucial in encouraging our students to develop, or further enhance, their love of reading which is at the heart of the school's vision for raising the standards of literacy.

I am planning to return to the original survey I did with the Year 7s and see what variations and trends there are in the responses are between male and female students.

## 6 | INCORPORATING ENRICHING ACTIVITIES THAT CREATE PUZZLEMENT AND ENHANCE COGNITIVE ACCELERATION



**Yanoula Constantinou**  
**Deansfield Primary School**

### 6.1 | INTRODUCTION

As Science leader of Deansfield Primary School and part of our whole school science development plan we endeavoured to create more emphasis on the Science teaching and learning, by bringing it up to date through research and creating a positive attitude towards the subject amongst the teachers and pupils. It was important to get all teachers on board by introducing various pedagogical approaches and new concepts to their everyday practice. For my own Action Research I decided to incorporate the concept of cognitive acceleration (CA), as it has been a big focus at Deansfield through 'Let's think' programmes in maths and literacy, so I too wanted to investigate these ideas in science and see how effective they were to everyday practice.

#### **What is Cognitive Acceleration?**

Its roots are buried deep in theory, CA is techniques you can adopt in the classroom that may help to "accelerate" children's learning. It's not a bought into Science package, it's a mind-set, an environment, one which all teachers can embrace. As educators it is important that we lean away from the content heavy and restrictive science activities that many bought into packages provide, lead by example and be confident in our own ability and teaching.

Research has shown an increase in the cognitive ability of children by assisting teachers towards the same aim in the context of mathematics. It supported the idea that relative intelligence is not fixed, and bared the importance of collaboration on the benefit of children's own thinking (Shayer & Adhami, 2010, p.363-379). Furthermore studies have also shown that exposure to 'Cognitive Acceleration' materials develop reasoning ability and reported that children demonstrated a more mature attitude towards science teaching (Moore, O'Donnell & Poirier, 2012, p.1-13). Cognitive acceleration programmes such as 'Let's Think' have shown that children who are exposed to such teaching techniques score higher than control groups; on cognitive development measures at the end of the programmes and in the subject matter (Adey, 2011, p.1-6).

There are three main parts to Cognitive Acceleration (Adey & Shayer, 2011, p.1-22):

1. Cognitive Conflict – Creating puzzlement in the child's mind, the activity or the discussion should conflict the child's preconceived ideas rather than passively accepting what is being taught, therefore pushing the boundaries of Vygotsky's ZPD (Zone of Proximal development).
2. Social Construction – Group work should be evident, so that children can build on or oppose each other's ideas. Allow children to not only learn from the teacher but from each other as well.
3. Metacognition – To reflect on one's own learning, not only consolidates the learning but let's children realise their own potential. Simply by asking children 'What have you learnt?' and 'How did you learn that?' or 'Who told you?' empowers children and lets them realise the potential of their own abilities.

### Causing Cognitive Conflict

It is clear that children enter our classrooms everyday with their own ideas of how the world around them came about, some of these ideas can be misconceptions, regardless their preconceptions are not just mistakes or false beliefs it is what they have seen or experienced (Driver et al, 1994). Often our job is to address these misconceptions by creating a physical experience that provides students with evidence to contradict their existing ideas. One of the cognitive acceleration approaches is to cause cognitive conflict and one way to stimulate this is by using a concept cartoon. From my own experiences of using these resources they are a fantastic way to ignite discussion, and quickly let you as the teacher pick up on the children's misconceptions or gaps in their learning. In a study conducted by Kabapinar (2005, p.135-146) the same results were discovered when using concept cartoons, they created focused discussions where reasoning behind students' misconceptions could be uncovered. It also found that this teaching and learning approach was effective in providing a purpose for investigation.

## 6.2 | METHODOLOGY: COLLECTION OF INFORMATION TO INFORM ACTION

My action research was an opportunity to explore cognitive acceleration techniques, particularly cognitive conflict, by incorporating these resources into my own science lessons. I planned 2 topics that began with a lesson that used concept cartoons and compared these to the topics where the initial lessons did not include a concept cartoon.

The first research lesson was also the first lesson on our topic of 'Materials'. In small groups I let the children watch a burning candle, posing a concept cartoon question 'What happens to the wax of a burning candle?' After giving the children some time to think about this question, observe the lit candle and read the concept cartoon (Social Construction). Children read each statement from the cartoon characters and decided which statement they most likely agreed and disagreed with then wrote it down.

The second lesson was an experiment that investigated 'How the Earth experiences seasons' for the topic of 'Earth and Space'. This experiment was discovered through my collaboration with Thomas Tallis and to create a more cognitive acceleration lesson I changed the way I started the experiment. Before jumping straight into modeling how to set up the equipment and 'tell' the children what they were looking for I decided to let them take charge. On their tables they had some equipment; a ball of plastercine, a protractor, squared paper and a torch. In groups of 4 I asked the children 'Using the equipment in the middle of the table can you show how the Earth experiences seasons'. This was after I had assessed their knowledge by asking them to write anonymously on a piece of paper the answer to 'how the Earth experiences seasons'. By doing this I was able to see that at least half the class had a good understanding. The reason this is more of a cognitive acceleration approach is because it gives the children ownership and through collaboration they can learn from each other. It will allow the children who do know an opportunity to impart knowledge and act the part of the teacher, and, hopefully will cause cognitive conflict for the children who thought they knew but their misconceptions are being challenged by other ideas.



### 6.3 | ACTION/RESULTS

**Lesson 1** - After their own thoughts on the concept cartoon I asked the children to discuss their ideas as a table and if they felt they wanted to change their opinions then that was okay. Here are some of their responses 'I don't think the candle gets fatter because it doesn't, it gets smaller but I don't really know why', 'I agree with the wax melts, because you can see it there on the side of the candle', 'The candle's hot so it melts the wax, you can see it's wet in the middle', 'The candle doesn't fall apart, it doesn't just break because the wax melts'. At this point the candles were significantly smaller after burning during the concept cartoon discussion. So I brought their attention back to the candle and asked 'Where has the wax gone?' The children appeared very confused at this point so I redirected them back to the concept cartoon and let them continue with their discussion. 'The wax can't dissolve because there isn't any water' and 'I still think the wax melts but now instead of being long it looks like a puddle'. At this point I decided to intervene as I had realised their experiences of burning candles were limited and although they had seen candles burn and wax melting, watching a candle burn to the end was something new and the wax that was left lying on their table was not enough to reconstruct the original candle.

Now it was my turn to impart some knowledge and explain that some of the wax burns, some evaporates and some melts. In my 3-day training it had become clear that just because it is a cognitive acceleration lesson doesn't mean the teacher shouldn't teach. Now the children were aware of what happens to the wax they became extremely curious and wanted to experiment with different variables, so for our follow on experiment I let them decide, in groups, their own variables. In groups they discussed the possibilities, 'I think we should burn one candle inside and one candle outside in the playground' -child 'That's a great idea but what impact would burning the candle outside have?' -Teacher 'I think the candle that burns outside will burn slower because it's colder outside so the flame won't be as hot and won't melt the wax properly'. Each group was testing the height of the burning candle over time with different variables such as; width, scent, temperature and presence of wind. Here are some of their results.

During the lesson it was clear from the discussions children were having and the confusion they were experiencing that cognitive conflict was present. The concept cartoon was a good resource to draw the children back to as their own ideas were limited, using a concept cartoon the ideas are already presented by various characters and the children are either agreeing or disagreeing with these characters and using their knowledge and experiences to justify their opinions.

## Flickering candles

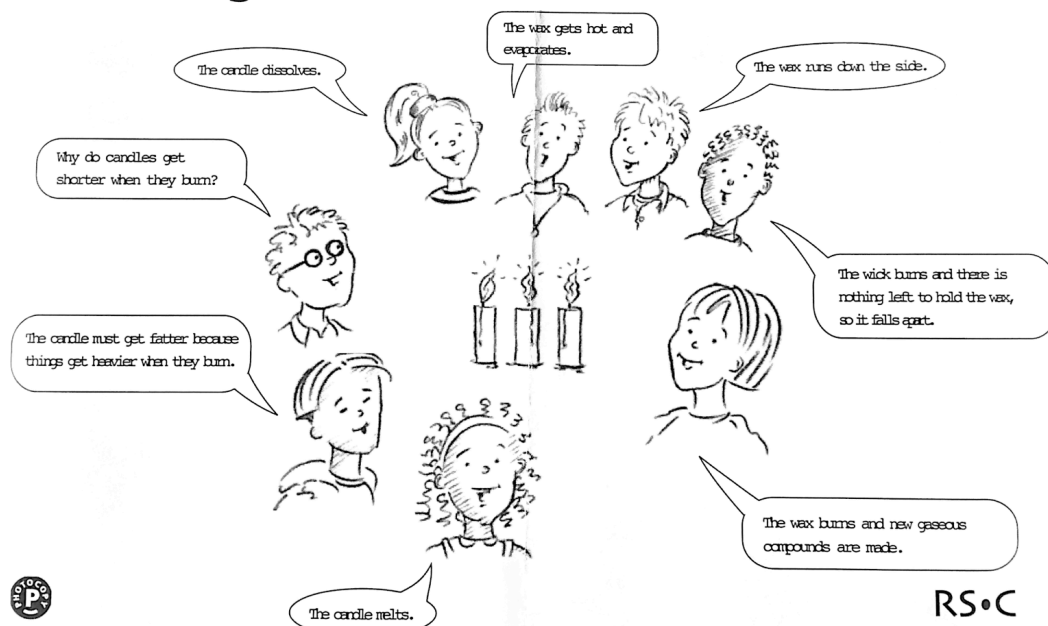


FIG. 1 FLICKERING CANDLES - CARTOON

For this particular lesson using a concept cartoon provided a platform for the children to become scientists and ignited their natural inquisition which inspired them to investigate further. The following lessons were predominantly child lead, they decided on their hypothesis and with little guidance they conducted their experiments and recorded their results using line graphs which then allowed them to make comparisons and conclude on the impact of their variable.



FIG.2 PUPILS PERFORMING THE EXPERIMENTS — LESSON 1

**Lesson 2** - When it came to showing each other using the equipment how the Earth experiences seasons some groups immediately used the ball of plastercine as the Earth and the torch to represent the sun. One group were using the squared paper and when asked what that represented a boy said "It's the galaxy" in response to his idea another child replied "But do we need the galaxy to explain the seasons?" At which point you could see him questioning his idea and thinking about what his partner had said, he was experiencing cognitive conflict.

Through this approach of letting the children show each other, this evidence is proof that giving the children ownership before the teacher jumps in with explaining and modelling can be a more effective way of children learning from children and for their misconceptions to be challenged.



FIG.3 PUPILS PERFORMING THE EXPERIMENTS — LESSON 2



## 6.4 | CONCLUSIONS AND RECOMMENDATIONS

The purpose of my action research was to find ways to incorporate enriching activities that create puzzlement and enhance cognitive acceleration. The lessons where I incorporated elements of cognitive acceleration approaches were more effective in various ways. Lesson 1 created great discussions and debates amongst the children, where each of them contributed their own ideas and challenged one another with their own experiences. Using a concept cartoon also gave the children platform to explore their curiosity and therefore created follow up investigations. Kabapinar (2005, p135-146) also found this a benefit of using concept cartoons, they are effective in providing a purpose for investigation.

Lesson 2 was as well effective, but for different reasons, it made me realise that it's not always best practice to begin every lesson 'telling' the children what they are learning and modelling to them how they are going to be learning it. Instead, slowing down and allowing them to be teachers, using resources and equipment to explain to one another, gives the teacher time to see possible misconceptions and it also ignites cognitive conflict as children will have different ideas. Some of these approaches are more adaptable than others, using concept cartoons depends on time and resourcing, finding the 'right' cartoon to fit the topic or the concept you want to address. Changing your approach to experiments and investigations, again depends on the experiment and the children's prior knowledge, not all experiments are adaptable and sometimes there just isn't enough time to assess prior knowledge or time for that exploration.

Whilst I found it near impossible to make every lesson have a cognitive acceleration element to it, I did manage to incorporate it into a lesson a topic where careful planning and resourcing was necessary). Even though for my own action research I did not collect any quantifiable data, the lessons I actively applied cognitive acceleration methods were more 'lively' children appeared more enthusiastic about their learning and took more control over it. Each lesson, were I was the observer meant the children were at the centre of their own learning, allowing them to discuss and debate scientific concepts with their peers, learning from each other, evidenced from the Earth and Space lesson. By creating puzzlement you create discussion and a platform from where investigations can stem. Over the year, from all the investigations the children completed in various topics the candle experiment and the work produced from it remained of the highest quality.

In comparison to more traditional lessons where children relied on my lead a lot more, they waited on me to model an experiment and only asked me questions to which I would provide an answer. Such lessons lead to a more subdued learner, a less energetic atmosphere hence, from my own observation applying cognitive acceleration methods to teaching and learning approaches can only benefit the children's cognitive ability. Whilst the only evidence I have is the classroom atmosphere cognitive acceleration methods created and the work children produced, these methods will become a part of my science teaching and as a leader within a school I have begun to impart my knowledge and experiences of these successful techniques, so that other teachers can incorporate them into their own practice.

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