Enquiring Schools

Evidence-based teacher development and school improvement at The Royal Grammar School Guildford

RGS

GUILDFORD

CONTENTS

The Enquiring Teachers Programme @ RGS Guildford

"Not one of us knows what we can do, until one fine day we stand up and do it." H.P. Wood, Magruder's Curiosity Cabinet

We are too busy: I'm too busy to write this and you're certainly too busy to read it. We are teachers and it feels like we have the equivalent of two full-time jobs to fit into each week. We don't need any new initiatives as we're already at capacity: teaching, planning marking, coaching, advising, caring…

Or are we? You are still reading, (and I challenge you to stick with this to the end or at the very least flick through) because I feel enormously privileged to have been associated with the eight teachers who have carved out time in their busy lives to be part of the inaugural 2015-16 Enquiring Teachers Programme (ETP) here at RGS Guildford.

My involvement started when Paul Bridges our previous Assistant Head (Teaching and Learning) moved to establish our new school RGS Qatar in Doha – so credit where credit is due: this was Paul's vision and his efforts established and shaped the programme. We have worked alongside the National Foundation for Educational Research (NFER) from the outset to tap into their considerable expertise in how to conduct rigorous, meaningful research in schools and I would like to thank Gareth Mills and Mary Van de Heijden who have helped us every step of the way.

The NFER helped to establish the key aspects of the programme: whole cohort initial training on conducting research and guidance to shape ideas into formalized enquiries; six personal coaching sessions spread over the academic year; email advice on tap; and guidance on how best to share findings with a wide audience. An important facet of the Enquiring Schools initiative is sharing and during our final staff training day we used a carousel format to enable our whole staff to attend presentations of their chosen enquiries. This first journal is designed to share further the findings.

Each of the eight teachers involved in the six enquiries engaged in this project not knowing how difficult or time consuming it would be, but inspired by a belief that it could be formative or transformational for them as individuals or for our school as a whole. There have been low points along the way, but these have been completely overwhelmed by the positive experiences. They did it – you could too.

Tom Shimell
Assistant Head (Partnerships)
RGS Guildford

Lifelong Learners

In great schools, everyone is a learner. This includes teachers and leaders, as well as students. Great schools are constantly looking at ways to develop.

One of the welcome trends in recent years has been the increasing interest in evidence-informed education and the practical ways that some schools are using research to bring about benefits to students.

Reading about research, however, is not enough. One has to put evidence into action and this is what a cohort of teachers from RGS have been doing this year. They have been using an approach that allows them to explore, in a robust and disciplined way, how evidence of what works might be applied in their classrooms.

We know that professional learning works best when it is sustained over time, involves collaborative enquiry and builds upon a strong evidence-base of what works. This year it has been an absolute pleasure to be working with teachers from RGS and supporting them with their own enquiries as they, like their students, seek to be great learners. I hope you enjoy their stories.

Gareth Mills
Head of Enquiring Schools
National Foundation for Educational Research

Coaching at RGS

It is well known that coaching has an impact on an individual's thinking and professional growth. Consequently, coaching has been an important element in the Enquiring Schools project at RGS.

During the year each teacher in the project has participated in coaching conversations, deepening their understanding of the research evidence and how it might be appropriate to their particular enquiry. Different research techniques have also been examined to ensure that it has been possible to capture credible evidence of impact.

Coaching can only be successful if the person being coached is open-minded and rigorous in their preparation and analysis. During the year I was delighted to participate in a series of thoughtful and professional conversations with the RGS team and I look forward to working with RGS staff again next year.

Mary Van de Heijden
Enquiring Schools facilitator and coach
National Foundation for Educational Research

A Google-y for teachers and students?

An enquiry by **Dan Hoyle**, Teacher of Technology @ RGS

As devices and software proliferate, how will communication between students and teachers develop?

Abstract

Peer review and peer learning is well evidenced as a positive tool to deploy in the classroom, but what happens outside of the classroom? By using cloud based software to do things that you couldn't do before, could collaboration and peer review enhance students' analytical skills and, ultimately, have a positive impact on the quality of learning that takes place in and outside of the classroom? My original enquiry was based around using **Google Apps for Education (GAFE)** to allow students to contribute to a single shared document which they then used to critically evaluate and improve each other's contributions. Little did I anticipate that within two terms we would be sharing and collaborating on in excess of one hundred documents.

Head in the Clouds

The wealth of tools that teachers now have available to them is already mind boggling (as anyone who has attended BETT will testify) and we are experiencing a surge in development. One such technology is Cloud based storage – but what role does this have to play in the classroom?

Cloud based file management is no longer new and neither are virtual learning environments, but **GAFE** has hit on something that I believe is more appealing than other options: It is free, clean of advertising and data harvesting, provides unlimited storage for educational establishments and maintains the familiar suite of word processing, presentation and spreadsheet software that we have come to expect. But this is only scratching the surface of the potential on offer and there are dozens of other applications that enhance communication and collaboration between students and teachers. All of these applications exist online (in the cloud) so are accessible from any device with an internet connection. Some of the opportunities that this presents are shown in Figure 1, the question is how best to use them.

Research shows that the most powerful learning happens when it is supported by an entire community of learners. This is an idea that was put forward by McLaughlin and Oberman[1] in 1996 and has been further identified by Hattie[2]. He found that the effect of students' peers on their learning was considerable with an effect size of 0.53 for peer influence and 0.55

for peer tutoring. My original proposition was therefore to investigate whether there would be improvement in the rate at which students:

a. comprehend complex mechanical and electronic theory by contributing to a whole class learning journal, and;

b. develop critical thinking skills, concise and accurate communication and critical analysis and evaluation skills when these are practised within a collaborative, online, whole-class learning journal.
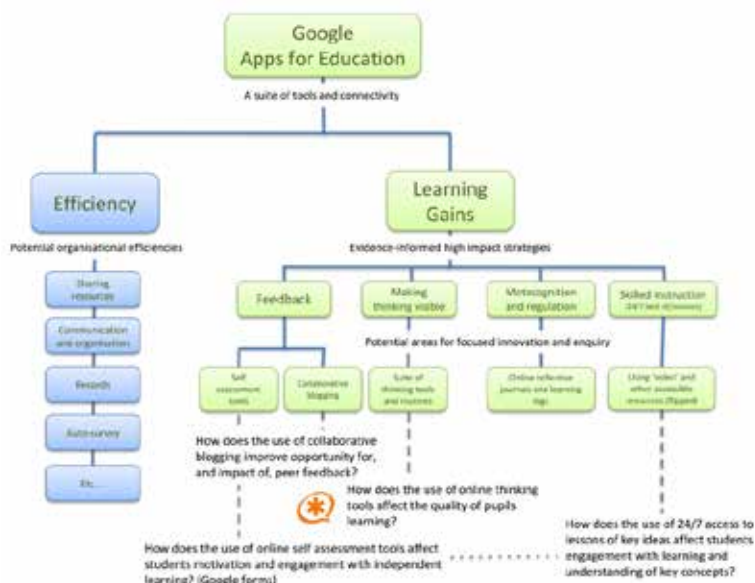
Fig. 1: Opportunities provided by GAFE

Begin at the beginning

To make a start, I created a template document using 'Google Slides' which had the first slide showing a series of spaces where my Fourth Form (Y10) Technology class were to place an image of an object, then subsequent slides for each student to produce an analysis of the object. When presented the viewer would click on the image to be taken to the analysis slide, from which they could return to the first "home" slide to then go and review another object.

Fig. 2: Screenshot of the blank template document

Pleasingly, all of the students were engaged in the process in class. There were initial teething issues with access to the platform, but this was easily overcome in one session after which all students were familiar with the process of logging-on and accessing the single document. Their homework was to look through everyone else's work and comment on two other students' work. The comment was to offer constructive criticism with the intention of aiding more detailed analysis to be achieved; to highlight an area that may have been overlooked or to ask a question that would promote another line of enquiry.

Fig. 3: Screenshot showing students' comments

During the lesson and reviewing the comments I noted:

- Higher levels of engagement and motivation
- Anticipation of peer review focussed the quality of the content
- Mature questioning of each other
- Peer support and encouragement
- Strengthened concepts of was is 'good'
- Added a degree of confidence
- Showed visible thinking that was ongoing and supportive

Increasing independence

Encouraged by this promising start, using the Google platform immediately became the normal way for me to set tasks and introduce new concepts and I was impressed with how easily it became expected from the students. I noticed the students became far more self-guided at the beginning of lessons: I observed that they would come in and immediately log-in to their Google accounts and be almost demanding of new material to get through. The production of work was much faster with the new functionality of having documents open on their personal devices while carrying out workshop based tasks allowing images of practical work to captured and immediately added to their write-ups. I was able to immediately see their work and comment on what they were doing. These

comments were attached to the document for the student to immediately respond to.

Previously, I had taught using PowerPoint documents to introduce concepts and start lessons. With this group I started using Google Slides which allowed me to share the file I was using to deliver the lesson with the students. I started the lessons in the same way, teaching from the front, but because the document was accessible to the students they would open it on their own screen as well. Initially this was distracting for me, but I quickly observed that it improved student focus! As the weeks progressed I noticed that I was speaking and repeating information far less and the students were more autonomous. They would automatically sit down, log-on, open the topic 'Slides' file from Google Drive and scroll through the presentation to the latest addition which would contain instruction for that lesson. The two or three minutes that it took for all students to arrive went from being an unproductive time during which students became distracted from the intended task while waiting to begin, to a quiet, calm time of independently getting back up to speed with their continuing Technology work.

Creating resources while teaching

My confidence growing, during one particularly sluggish afternoon I decided to try a new approach by communicating my expectations along with some theory points via the shared topic document instead of vocally (Fig. 4).

Fig. 4: Screenshot showing my impromptu slide

I found I was able to refocus the group with a simple written instruction. The images were taken on my phone during the practical demonstration at the beginning of the lesson and were added to the slide immediately after they were taken.

Doing this in front of the students using my own device demonstrated the ease and also generated a buzz of excitement. They became eager to get on and try this themselves. An unexpected outcome of this exercise was that students were able to demonstrate learning through videoing their circuits in action and embedding them in their Slides document (Fig. 5).
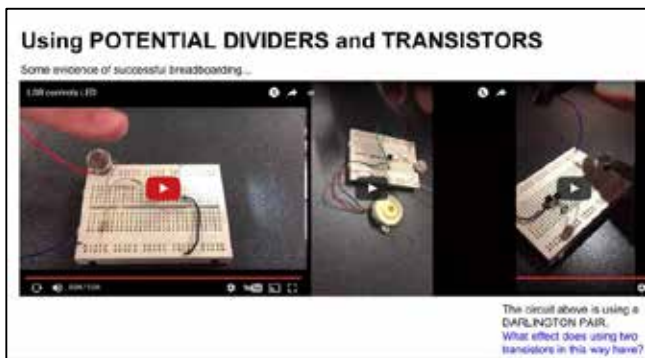
Fig. 5: Screenshot showing student created video

Students demonstrated higher order thinking skills such as creating, analysing, evaluating and applying. Using the SAMR model (Fig. 6) to evaluate the success of using collaborative online tools I have seen that I have been able to transform learning as the technology has allowed the creation of a new task previously inconceivable. The students have not simply substituted the pen and paper for a word processor, nor have they just augmented it with the additional functionality of spell checking. By using GAFE they have been able to embed images and videos evidencing their own learning; they have been able to share their work with each other and offer real-time feedback which has significantly modified the original task by offering the opportunity for student collaboration, sharing and reassessment of learning.
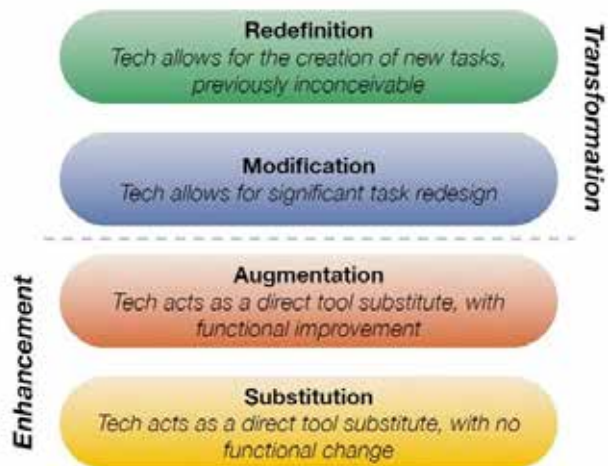

Fig. 6: SAMR model for analysing use of technology

Surprise Outcomes

The group got through the work set very quickly using GAFE as the platform for teaching and learning. The learning objectives remained the same according to the SoW, but the student access to learning material changed. The group very quickly adopted the process of opening what had previously been a teacher led presentation themselves on their own device so they could immediately get on with work. It generated a sense of competitive learning that caused a sense of urgency in those that were getting through the

material slower. I found this to be a positive feature as it almost totally removed off topic chatter whilst doing practical work. It has been very difficult to quantify, but I do feel that there has been a significant increase in focus and attention to learning since using GAFE to deliver my lessons. Resource and file sharing was easy using a shared folder structure that naturally grew out of the style of teaching and working that this group undertook. All the students in the group have access to this Drive and are able to view, comment and share files easily within this environment.

Not only did Drive prove to be a way of easily managing student work and teacher-led content created within GAFE, it also allowed students to provide evidence of learning from other pieces of software. One of the modules the Fourth Form (Y10) undertake uses cloud based CAD software to teach 3D design. Previously the students would have had to print out the work they had done and hand in a physical copy so that assessment could take place. Now, by creating a folder in Google Drive for students to place screenshots of their work, I was able to easily assess and offer feedback, but most powerful of all students could see each other's achievements and an idea of what 'good' looked like became immediately apparent to all (Fig. 7).
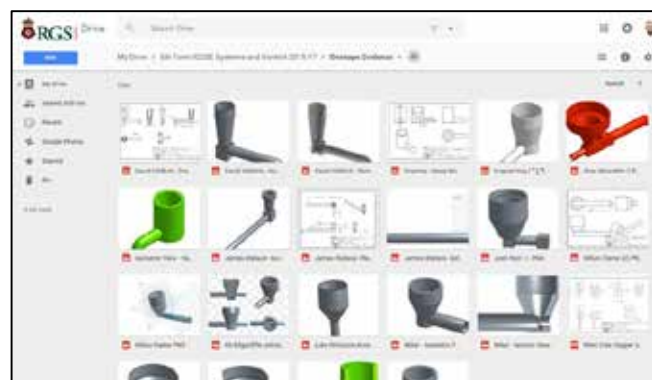
Fig. 7: Shared 3D design submitted for assessment

Gathering Data

Collecting empirical data to evidence my feelings was difficult for a range of reasons. Not least of which was that I was using a small group of Fourth Form (Y10) students who were studying DT Systems and Control and it is likely they have a natural disposition to engage with the use of new technology beyond the average. Also there was no control group and any benchmark data from previous years of running the same course would be difficult to compare due to the numerous other factors that could be responsible for any difference in outcome. I, therefore, decided to assess the students learning using an online test that I created. I used Slides to set an assessment of the electronics theory topic and the students knew the test was happening. Unfortunately, they performed as I would have expected and there was nothing

remarkable about their results. I had proposed that the ease of accessing their notes for the purpose of revision would increase their results and I had expected that the personal nature of the notes plus the opportunity to access at any time on any device would mean that students would engage in revision more easily; This did not appear to be the case.

Learning vs Retention

During our test review it was clear that some students had revised while others clearly had not so I proposed that I would be re-testing in a few weeks' time. This would be an impromptu assessment designed to check retention. I wanted to see if the higher order thinking that had taken place while doing the work in the first place combined with the ease of access of notes which had been reviewed, commented on and improved would lead to a different result at a later date. Pleasingly, the results showed that those who had underperformed in the first assessment performed very well the second time, and those who had performed well the first time performed equally well the second time.

Again a range of additional factors came into play which has made it difficult to determine whether the use of cloud based learning environment has played an key role in achieving this outcome. After interviewing the students, it became apparent that those who had done badly the first time were concerned of the sanctions that might be imposed if they were to perform badly again. This indicated their motivation to ensure they knew the subject matter, but did not indicate whether GAFE had caused an improvement in the rate of understanding. They did indicate that they very much enjoyed the ease of access of information. They also indicated that they found the platform to be very reliable on all devices allowing access to their work in a variety of environments; students were able to work in the classroom, during break times, while commuting to and from school and while at home. They enjoyed the functionality of not having to save work before exiting the software. They also enjoyed being able to have the same file open on multiple devices at the same time so they could be active while accessing their work. Not being tethered to a computer at a desk was considered to be a huge benefit.

Conclusions

Aligning the use of new technology with a desired learning outcome is always going to be a difficult and very personal thing dependent on a huge number of variables, not least of which is teacher interest and ability. All technology involves a learning curve which can be discouraging. In some settings it can be all too easy for students to generate apparent evidence of learning without being very engaged in the process.

Copying and pasting is a danger that all students need to avoid; higher order thinking doesn't take place and learning has not been improved. On the other hand, the possibility to demonstrate learning through the production of a 3D printed model which relied on drawing and building a 3D virtual model in an online environment accessible from a variety of devices in a variety of locations shows a very clear learning outcome. Reflecting on all of the positive outcomes from my enquiry, I would say that the most important and clearly obvious were increases peer support and encouragement, visible thinking and ease of feedback and dialogue with students.

Next steps

I have been hugely encouraged by my experiments and I will continue to evolve and develop my understanding of what is available and to share it with as many people as I can. In particular, I intend to use Google Forms more widely as an assessment tool.

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References

[1] **McLaughlin & Oberman** (1996), *Teacher Learning: New Policies, New Practices*

[2] **Hattie, J.** (2015), *The Applicability of Visible Learning to Higher Education*

https://iteachu.uaf.edu

http://edtechteacher.org/

Student comments:
"Using Google docs has stimulated the class to learn independently and work-out our problems for ourselves."

"Google docs is really cool because it means that I can discuss and get feedback from my teacher and other students even while at home."

"Google Docs has allowed me to work on my project in a variety of situations and locations increasing my efficiency."

"I can store the majority of my work online, a superior method to closed-off, school based storage. The cross-platform support means I can work on my phone, Mac or laptop, so I can work anywhere."

"Now I prefer to use Google Classroom for all my school projects, regardless of whether they are part of technology."

"Google drive has boosted my organisational skills phenomenally or rather stopped me from having to organise myself to the same level!"

"Miss, you've tricked us into learning!"

A study into the use of cooperative learning in the RGS classroom by **Katherine Walker** (Biology, Head of General Studies) @ RGS.

Cooperation

Cooperative learning techniques give variety and challenge to students in the classroom. For them to be totally successful, all students must participate like pieces in a jigsaw, if they don't, no-one in their group can achieve the learning goal. This differs from more traditional 'group' based activities where super keen students can dominate allowing others to kick back, letting their classmates do the work. The skills of cooperation that are developed are important in today's modern society where collaboration is key to so many industries and businesses. My study found that cooperative learning definitely has a place at the RGS. Students felt that the activities were more engaging, more enjoyable and there was an improvement in academic outcome compared to individual learning activities.

What is cooperative learning?

*"Cooperative learning is a way of **working together** towards a common goal/leaning outcome/reward. It is crucial that the success of the group depends on the **individual learning of every member** – i.e. there is individual accountability."[1]*

Animal testing?

My guinea pigs were two groups of Fifth Form students, whom I had taught for two years. They were familiar with a variety of cooperative learning styles and happy to go along with the study. I chose a technique from a style developed by Kagan Learning called *rally coach*[4,5], in which one student is the 'teacher' and the other the 'learner'. The 'teacher' has the mark scheme and must support and encourage the 'learner' towards the right answer but they are not allowed to give them the answer. Once full marks have been achieved, both students write down a perfect answer before they swap roles. The control group worked in silence with the same exam questions and their own copy of the mark scheme. Both activities took the same amount of time to complete. The following the lesson the students completed a test and I compared their results:

Learning Style	Percentage on exam (%)	Mean ±2 standard error
Cooperative	**70.42**	**67.04 – 73.80**
Individual	69.49	66.94 – 72.48

Clearly, this didn't show any real academic advantage to cooperative learning. Going back to the research, some studies have found that when using cooperative learning, lower achievers improve more than higher achievers when compared to lecture style teaching.[2] However, many other studies found that high achievers gain just as much as do low and average achievers.[3]

Extensive research has been carried out to look at the effect of cooperative learning on students and the results are overwhelmingly positive. For example, a meta-analysis carried out by Johnson and Johnson (2000)[1] concluded that as well as an improvement in academic achievement and higher level thinking, students who participated had increased motivation, retention and time on task. They found an improvement in moral reasoning and psychological health (including a greater self-esteem) and a reduction of stereotypes and prejudice. There are so many different cooperative activities to choose from to suit the class, subject matter and teacher so I felt compelled to do a second study.

Reproducing results

As our revision towards the IGCSE Biology exams continued, I decided to use the topic of reproduction to re-test exam achievement and I give the students questionnaires (using a Likert scale) to ask how they felt the different learning styles contributed towards their learning habits. It also asked if they found the activity useful, if they enjoyed it and if they thought the activity increased their understanding. The procedure I followed is summarised below.
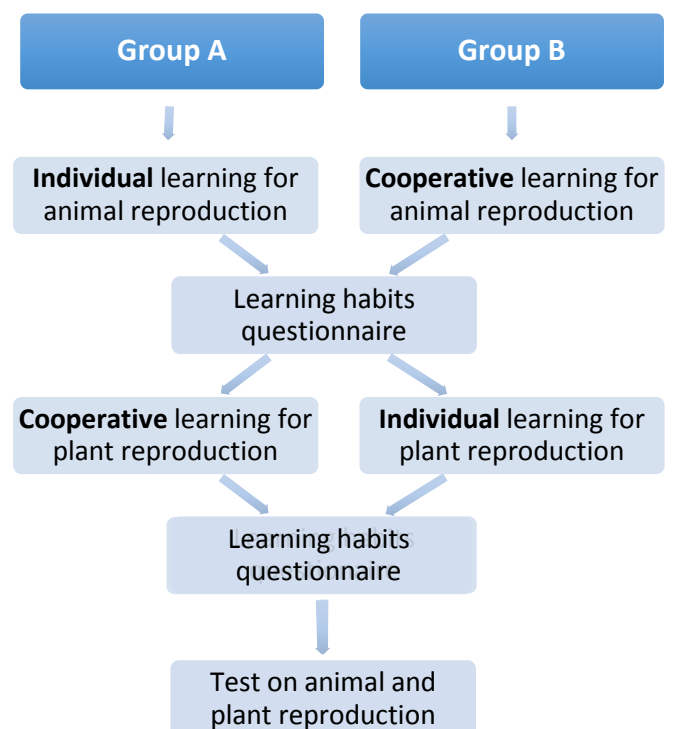
These results were interesting for the academic attainment:

Test topic	Average percentage for exam topic and type of learning	
	Group A	Group B
Animal reproduction	88.4 Individual	90.8 **Cooperative**
Plant reproduction	84.3 **Cooperative**	74.6 Individual

For Group A, while the average percentage was higher following the individual learning activity, the raw data shows that 33% of the students actually did better on the exam questions following the cooperative task.

For Group B, the overall result was massively in favour of cooperative learning, with only 11% achieving an improved mark following the individual task. However, I believe that the plant reproduction questions were harder than the animal reproduction questions and that this skewed the results.

The differences in the students' attainment under each learning activity were each calculated. A Monte Carlo randomisation test was then used to find out if these differences were significant by comparing the data sets to sets of data obtained from the original by randomly assigning teaching style labels (Fig. 4). This test took into account the order of the exam questions and the style of learning and concluded that **cooperative learning significantly improves academic attainment**.
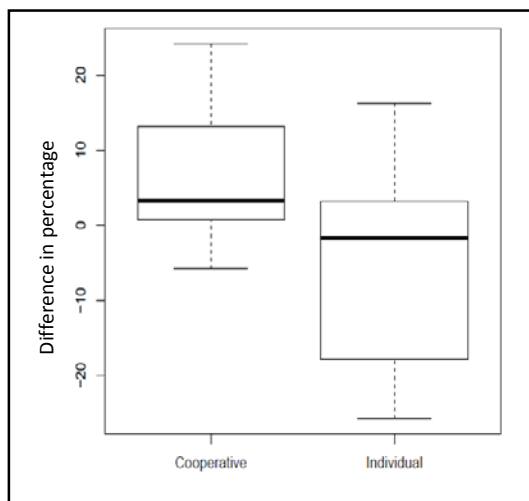

Fig. 4: This chart shows the differences in student percentages for the cooperative and individual learning techniques. The percentages have been adjusted for differences between the mean plant and animal scores. The dark band is the median score, the box represents the interquartile range and the whiskers are the range of differences. Student scores were significantly higher following cooperative learning compared to individual learning (p = 0.011).

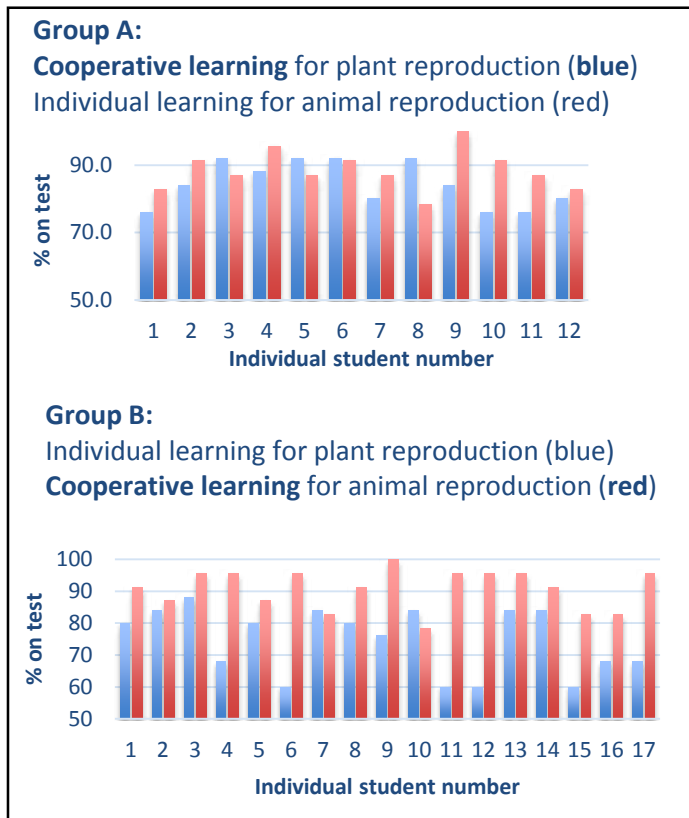These graphs (Fig. 5) show how individual students scored for individual and cooperative learning.

Fig. 5: Graphs to show how individual pupils faired in the plant and animal reproduction test questions. In group A 33% of students fared better with cooperative techniques; however, it can be clearly seen that cooperative techniques favoured Group B in the animal reproduction questions.

Qualitative feedback

The questionnaires used during the learning process identified more significant differences, with student feedback supporting the use of cooperative learning techniques.

With overall impressions, students found both learning styles useful, but they **enjoyed the cooperative tasks more** (p = 0.004).

With regard to the school learning habits, students felt that the **cooperative tasks improved 'teamwork'** (p = 0.004) **and 'engagement'** (p = 0.004) and that the **independent task improved 'independence'** (p = 0.006). There was no significant difference in the overall perception of 'tenacity', 'linking' or 'reflection'.

However, a surprise finding was that students felt that **individual activities improved their understanding more than cooperative ones** (p = 0.004), despite the evidence that cooperative activities gave them higher exam results. Might this mismatch be because students are poor judges of their own understanding, or because the exam didn't assess real understanding?

Conclusion

This is a small study using a selected group of bright, Fifth Form (Y11) boys, not representative of the population. They learn quickly, work hard and retain the knowledge regardless of the activity.

What I will take away from this experience is that students appreciate variety in the classroom. In my study the results for attainment, enjoyment and engagement data were supportive of cooperative learning, so I shall continue to practise cooperative learning in the classroom confident that the other benefits will be developing in the background.

> **Quotes from my Fifth Form (Y11) students:**
>
> *"Miss, you've tricked us into learning!"*
>
> *"I preferred the discussions with the group as you get to hear other people's ideas and different viewpoints, which is better for learning."*
>
> *"I believe working in groups not only helps my understanding, as people explain things I don't get in a way I understand, but is also fun and enjoyable."*

Next steps

Cooperative has been shown to improve how students feel about school, teachers, their peers and themselves by improving their social independence[6]. It would be interesting to work with our students who have low self-esteem to see if any positive benefits could be achieved following a course that used cooperative techniques, as intervention in the First Form (Y7) might have a lasting effect.

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References

[1] **Johnson, D.W., Johnson, R.T., Stanne, M.B.** 2000. *Cooperative learning Methods: a Meta-Analysis.* Researchgate.net

[2] **C. Jarjoura et al.** 2015. *Using team-based learning to teach Grade 7 Biology.* Journal of Biological Education, vol 49:401-419

[3] **Slavin, R.E.** 1995 *Cooperative learning: Theory, Research and Practice.* (2nd edition), Boston: Allyn and Bacon.

[4] **Clowes,G.** 2001 The Essential 5: *A starting point for Kagan cooperative learning.* www.KaganOnline.com

[5] **Kagan, S., Kagan, M. Kagan** 2001. *Cooperative learning*. Kagan publishing.

[6] **Johnson, D. W.** (2003) *Social interdependence: The interrelationships among theory, research, and practice,* American Psychologist, 58(11), 931-945.

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Ideas to try in the classroom

There are many different cooperative learning strategies that can be used in the classroom, the trick is to find a few that work for you. I think that a good place to start is to use Kagan techniques [4][5], in particular 'timed pair share', 'rally robin' and 'rally coach'. As with anything new, it is a little nerve wracking trying them out for the first time. However, the more you use them the easier they get - I particularly like timed pair share and rally robin as they require no resources other than the students and a timer, so can be woven into lessons without any prior planning.

Cooperative learning technique	How it can be used in the classroom
Timed pair share	Give a pair of students two things to talk about (questions, opposing viewpoints, statements, etc). The first student talks about their task for 30 seconds, uninterrupted, by their partner who listens. Swap over. For example, discuss the pros and cons of GM crops then share ideas with the class. Discussion points could be summarised into a table or even developed into a piece of extended writing.
Rally robin	In pairs, students take it in turns to brainstorm a particular topic e.g. characters in Macbeth. Answers can be shared with other pairs or brought together by the teacher.
Rally coach	Partners take turns, one solving a problem while the other coaches. Then partners switch roles. This is useful for any process or procedure with a definite right/wrong, e.g. the problem solver may have an exam question and the coach has the mark scheme. At the end, both students write down model answers for the exam questions.

What is the French for rehearsal?

An enquiry by **Nancy McClean**, Head of Drama @ RGS

"It is a truth universally acknowledged, that every teacher passionate about their subject must be in want of equally keen students." (Apologies to Jane Austen.)

In search of quality

How might I inculcate persistence and self-awareness in my Third Form (Y9) drama pupils? How can I instil in them a desire for excellence and quest for continual improvement? Drama, quite rightly, is perceived, by most, as enjoyable and informal; A chance to roam free from desks and pens across the savannah of the drama room and pounce upon your friends in a mock play fight. Well, my lessons are not quite like that and despite the informality of the room I am on a mission to develop the ability of my charges to work at a practical drama task until it is as near "perfect" as it can be. I am not in the business of transforming boys into actors, but rather in giving them some essential life skills and principally, through this enquiry, the ability to identify how to progress and persist until they can present a work of quality.

My experience is that boys, particularly at this age, tend to rush through tasks once and feel that is "good enough". I wanted to encourage the students to produce "beautiful work"[1] and to use persistence, precision and self-reflection as they engaged in the task.

To do this I had to counterintuitively redesign my scheme of work to allow four clear lessons spent on refining and rehearsing one single scene. In a lesson lasting forty minutes it is clear there isn't the time to both attempt, reflect and revisit work. The search for excellence needs dedicated time and I therefore focused on depth not breath for my trial classes. This meant I would not be teaching three other "skills" embedded in the topic.

My initial ideas were to present boys with a piece of pre-recorded exemplar work (in this case a short scripted scene from *The Diary of Anne Frank*) performed ideally by peers so that the "monkey see, monkey do" approach may encourage a more thoughtful and polished outcome when attempting the scene themselves. This of course can bypass personal creativity and interpretation both of which are inherently vital skills. Ron Berger[2] describes this as "tribute work" and extolls the virtue of pupils being able to approach a piece of work with their goal defined. He argues that the process of recreation teaches the skills and aesthetic sensibility needed to then use for original work. Drama teachers commonly model exercises for students to both shortcut "reinventing the wheel" and to make explicit the task kinaesthetically rather than solely verbally. This exemplar approach however is complicated when group work is attempted; the stresses and complications of a range of ability and attitude muddies the process and can be a disincentive to work.

Success criteria & reflection

"Defining and demystifying the destination"[3] was the approach I felt best suited this enquiry. The students collaboratively defined what they would expect a really good acted version of the scene to demand of the performers. These boys are not vastly experienced in drama, their teaching is on a carousel basis where they have half termly rotations with music lessons. The criteria for success must therefore be necessarily simple enough to be understood by all and to structure this process I used prompts (Fig. 1):

Fig. 1: Success criteria prompt slide.

Once boys had identified these specific areas that needed careful focus they attempted the first run through of the scene. The primary tool I used to help them gauge their progress was filming each week's work on an iPad and uploading this to a private Vimeo channel where boys could watch themselves back at home and consider where they might improve for the following week. The self-reflection aspect of drama work is very hard to access without such an impartial and external viewpoint. The ability to assess how well each individual was doing became depersonalised and therefore less "critical". Boys of this age are particularly prone to self-consciousness as puberty takes over and insensitive or poorly timed feedback can be destructive and demotivating.

Evolution

Initially, fairly typically (and understandably) participants are largely unaware of the need to physically create character, use the space to communicate relationships, or explore body language to reveal internal thoughts. (Fig. 2)

Fig 2: Physically unaware practice

Following this initial rehearsal, I showed the boys a short film where Ron Berger shows kindergarten children how work that is redrafted after constructive and focused peer advice can be improved and perfected. (Fig. 3)
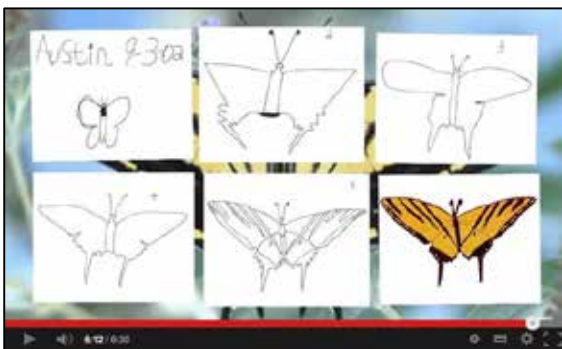

Fig. 3: Still from Ron Berger's film.[4]

On reflection, this was a very powerful spur in helping my students grasp that repeated attempts to improve could result in an excellent end result. Improvements were immediately obvious at a rehearsal following both the showing of Ron Berger's film and a chance for the boys to reflect on their performance using Vimeo. (Fig. 4)

Fig. 4: Better physical awareness

Already boys have begun to think about the use of space and awareness of the audience. Their focus is now away from their scripts and into listening and reacting to the character speaking. There is still some way to go in terms of individuals' self-awareness of body language but progression is evident.

Peer feedback

My next intervention was to use peer evaluation of work in progress. Originally I envisaged a written feedback scenario, but the drama studio does not lend itself to this kind of task and it is very time consuming. To streamline the process the questions were given out (Fig. 5) and I paired up individuals with a peer who would and could provide useful verbal feedback for a partner. The more confident boys were partnered with each other and those less outgoing helped each other. This was to protect against a common situation where a student who finds self-expression and performance easy can misjudge comments they make to a peer and in fact be rather destructive with their feedback.

- **Did their gestures/ facial expressions /movements seem well planned and well-rehearsed?**
  If yes describe a moment where they showed this. If not describe a moment where they showed they weren't well planned / rehearsed.

- **Were the movements / gestures and facial expressions appropriate for their character? Explain.**

- **How well could you hear them? Was their voice clear at all times?** If not, why not?

- **What guidance would you offer your classmate so that they could improve this performance?**
  You may want to suggest something to do with their body language / characterisation/ voice or movement around the stage. Be detailed and helpful.

Fig. 5: Structure for verbal feedback.

A scene was watched and each person fed back to his own partner advice and help on how to improve. This was also filmed for boys to compare what their partners had seen and commented upon and the "evidence" of the film. In drama participants often think they are doing something that just doesn't translate to the stage.

Following feedback, two more attempts at the scene were planned and the final piece was shown.

At the final attempt boys were largely off-scripts and spontaneously finding ways to react to the dialogue and "inhabit" to a greater degree a sense of character (Fig. 6). Their ability to imagine the environment where the scene was set had improved as had their engagement with the emotional content of the material.

Fig. 6: Final performance

Conclusions

So to summarise my findings:

1. The "depth not breadth" approach had real benefits in terms of small incremental improvements to the practical outcome of the work.

2. Using filmed attempts for boys to self-assess and objectively view their work was effective.

3. Students' appreciation of how their physical and verbal skills were crucial in communicating ideas and emotions was enhanced.

4. The process of repeating a single activity with a view to constant improvement was a valid and worthwhile approach for most participants who individually could see and implement specific improvements.

The areas of the research that were less conclusive:

1. It was difficult to ascertain if **all** participants had experienced objective improvement. Some boys remained unable to match what they thought they were doing with the actuality.

2. Whether the experience of intensified and sustained focus on one exercise will translate into a more precision driven approach for future work; quite simply, have the students learnt that rehearsal combined with self-awareness and a commitment to improve are the ingredients for "beautiful work".

And the French for rehearsal?

Répétition.

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https://www.youtube.com/watch?v=hqh1MRWZjms

"Perkins: A Satisfactory effort… Smith: Detention!"

An enquiry by **Natacha Goul-Weeker** (Assistant Head (Learning)) @ RGS

Can a reward system improve motivation for pupils in the Middle School (Y10-11)?

A quick fix?

If there was a quick and easy way to increase the motivation, behaviour and attainment students in your classroom, would you try it?

As a Middle School (Y10-11) Head of Year I was frustrated by the lack of motivation amongst some of my pupils, whose grades failed to improve despite the interventions of their teachers. Several of these pupils were also repeatedly receiving a number of detentions from subject staff. The detentions did not seem to be an effective deterrent and seemed to demotivate these students further.

A common complaint amongst the lower attaining pupils was that even when they had tried harder, this was not reflected in their grades. Subject teachers on the other hand wanted to see sustained improvement over several weeks before they increased a grade: a single good homework or contribution in a lesson was not sufficient.

It seemed that the Middle School needed a reward system, so that teachers could reward improved effort in one piece of work and so that students could realise that their efforts were being recognised. I hoped that receiving recognition for their effort would encourage the pupils to persevere and this might in turn increase their attainment in the long run. I also hoped that a positive system which rewarded positive behaviour rather than punishing bad behaviour would help to motivate pupils. The academic research supported this hypothesis: 'pedagogy has long suggested that we ought to reward students more often than punish them to encourage positive behaviour' (Skinner).

Finding a suitable reward system

The reward system used in the Lower School (Y7-9) involved awarding Tutor Commendations ("TCs"), but the general consensus amongst staff was that older pupils were not motivated by receiving TCs. The Middle School therefore needed an age appropriate reward system. After inquiring into the reward systems used at other similar schools, it seemed that a tangible reward might be more suitable. Academic research also suggested that older students are more receptive to financial or tangible rewards, but it was important that pupils received their reward soon after their positive action, as all motivating power vanishes when rewards are handed out with a delay. (Levitt et al.)[1]

I decided to trial three different reward systems with three different Fourth Form tutor groups for two terms:

a) Tutor Group X: The Tutor logged TCs, as in the Lower School.

b) Tutor Group Y: The Tutor logged TCs and awarded a 'Golden Commendation' which was displayed on a 'Wall of Fame' in the tutor room. (Fig.1)

Fig. 1: The 'Wall of Fame'

c) Tutor Group Z: The Tutor logged TCs and stamped a reward card, which entitled the pupil to various rewards such as jumping the lunch queue or receiving a small treat from the canteen. (Fig. 2)
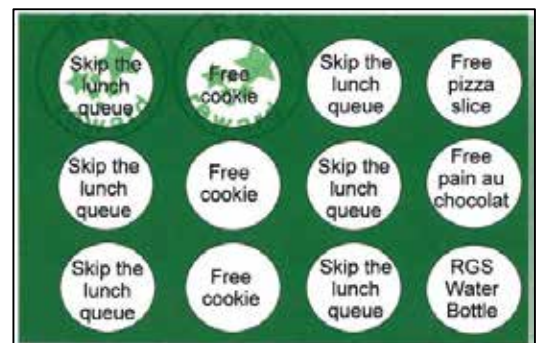
Fig. 2: The reward card

Staff were asked to start awarding TCs to Fourth Form (Y10) pupils, ensuring that they were rewarding *effort* rather than simply high attainment and ensuring that their expectations of each student was relative to their ability. I monitored the individuals in each tutor group through questionnaires, (Fig.3) their grades, focus group interviews, as well as interviews with their tutors. I was particularly interested in monitoring students who had low motivation or whose grades were poor.

Fig. 3: A Motivation Questionnaire

Conclusions

After two terms, Tutor Group Z's motivation had improved the most since the introduction of a reward system, according to the results of the questionnaire and the responses of the focus groups. They had also received over twice as many TCs as the other two tutor groups. Contrary to Tutor Group Z, the motivation of the two other tutor groups had decreased slightly by the end of the year. Nevertheless the boys I interviewed in Tutor Group Y were still positive about TCs and said 'we do value [TCs]. It's good to know that teachers recognise that you are putting in the effort. They should be used more. TCs are good because it lets you know that staff have valued your work.'

This sentiment was echoed by the Fourth Form (Y10) tutors. One tutor noticed that logging the TCs had a positive effect on the self esteem of one of her tutees. It also then allowed the Head of Year to reinforce the praise.

"I noticed a particularly dramatic turnaround in Mark's attitude after he started receiving a few TCs for his effort. He was really eager to get them signed off by me and visibly beaming with pride at each one. Once his teachers started to reward his effort and good performances relative to his own standards, rather than those of the whole class, his report comments started to remark on his increased input and proactivity. His grades continued to improve steadily over the course of the year."

Another startling conclusion which was consistent across all three tutor groups was the negative effect of detentions on their motivation. Very few students felt that fear of being put into detentions motivated them to work. Despite this, 260 detentions were given out to Fourth Form (Y10) students during the trial, compared with only 187 TCs. The discrepancy between the awarding of rewards and sanctions is contrary to what academic evidence recommends:

"Features of an effective formal system of rewards and penalties are a high level of use by teachers of rewards and praise and a low level of use of penalties." (Boddington et al.)[2]

One final outcome of the trial was how strongly the students interviewed felt that teachers need to be more consistent with their use of TCs. One focus group told me: *"Teachers think that they have no value. Lots of teachers don't seem aware about them. Some teachers use them more than others. They all have different systems."* This is in keeping with academic research which says that:

*"Factors which increase the efficacy of reward systems include: **consistent delivery, perceived fairness, prompt recognition** of behaviour, **regular** and **frequent** small rewards."* (Merrett and Merrett 2013)[3]

Four key points to remember:

- Rewards are much more motivating than sanctions. However, RGS staff currently award far more sanctions than rewards to their students.

- Rewards and TCs are highly valued by pupils at the RGS. A tangible reward system (such as the reward card) is more motivating for older pupils.

- It is important to reward effort rather than attainment.

- An effective reward system requires consistent, fair and frequent use by staff. Prompt recognition of behaviour increases

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Next Steps

I am delighted that after completion of this trial, RGS has agreed to roll out the reward card throughout the Middle School (Y10-11) (Fig. 4). Whilst the reward system will no doubt require a few more tweaks as it is used by more students and staff, I hope that it will prove beneficial in boosting motivation across these year groups.

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Case Study: Philip's Progress

Using the example of one underachieving Fourth Form student, we can demonstrate the potential motivating power of a good reward system. By the end of the trial he had been awarded eight TCs but had also received twenty detentions! Overall, Philip improved the most in the subjects whose teachers awarded TCs and rewarded positive behaviour. He made the least progress in the subjects whose teachers awarded repeated detentions and sanctions. At the end of the trial, I asked him about his motivation and the reward system:

1. *What motivates you to work hard at school?*

   I got quite a lot [of TCs]! It was really good. It felt nice to be rewarded. It felt better getting good marks. I tried a lot harder after I got my first TC. After I got my first one, you'll [sic] keep doing that in more homeworks and keep doing that and just get better. I'll try harder for something that has a reward than something that doesn't. If you do well, you want to keep doing well. I give up if I haven't done so well. In the subjects where I had mediocre grades, I have improved... In the subjects where I had bad grades I haven't improved. A bad grade just demoralises me. It didn't make me focus more or anything like that in lessons.

2. *What motivates you to behave well?*

   I don't know. Probably the fear of my parents being told. I don't feel scared of detentions, it is when the punishment goes up a level!

3. *How can the TC and reward system be improved?*

   There needs to be more consistency between subjects and teachers. In some subjects I was trying just as hard, but didn't get anything.

Philip received the most TCs from his English teacher who wrote in his end of year report that *"The improvement Philip made this year in terms of attitude and effort have been some of the most satisfying of my career. From '3M'* [Below expected effort (3) and Moderate progress (M)] *in his December grade sheet, he has become a model student in every way."*

Tutor Group Z's Tutor was very positive about the effects of the reward card on his tutor group overall and the changes in this student in particular:

"The reward system seems to have quite nicely removed the social stigma of expressing pleasure at TCs overtly. It is possible that, by having a real reward, the system is being seen as more grown-up... Students who would previously have shown disdain for the TC system have not been negative about the new system... the fact that most of the low achievers have got at least 1 TC has stopped them resenting the system.... With one student in particular who had quite a negative outlook on school at the start of the year I think that the opportunity to have praise from a teacher that he then logs with the tutor seems to have made him less negative about school and it has possibly been a boost to his self-esteem in general."

(NB: Any names used in this article have been changed to protect the students involved)

Fig. 4: The new RGS Middle School reward card (right)

They're teenagers – of course they're moody!...Right?

An enquiry by **Sophie Blair** (Head of Fifth Form) and **Sarah Besly-Quick** (Head of Teacher Training) @ RGS

What's the issue?

Mental Health in adolescents has been a hot topic in recent years. Headlines such as *"Teenage mental-health crisis: Rates of depression have soared in the past 25 years"*[1] and a HSCIC report stating that 50% of mental illnesses begin before the age of 14 years, have meant that schools, parents and the Health services are feeling the pressure.[2] The NHS has been struggling to deal with the overwhelming referrals to their mental health services and a survey of more than 1,000 parents found that two thirds who accessed Child and Adolescent Mental Health Services (CAMHS) on the NHS felt let down by the treatment of their child.

Causes for this 70% rise in depression and anxiety in teenagers over the last 25 years are not clear cut but recent surveys completed indicate exam pressure, a changing social environment and body image concerns are some of the biggest factors. Anecdotally there has been an increase in stress and anxiety within the exam year groups at the RGS as the pressure builds towards their public exams. Therefore, through our study we wanted first to assess the perceived stress levels in pupils and then to trial different interventions which might equip our pupils with the tools to manage stress effectively.

Our enquiry

Two particular activities particularly stood out as worth investigating at this preliminary stage, based on a combination of personal experience, academic research and anecdotal evidence from the, media and other schools: **mindfulness** and **yoga**.

Mindfulness has received a great deal of media attention in recent years, with an upsurge in the popularity of apps, courses and literature promoting mindfulness techniques as a means of improving concentration, relieving anxiety and improving wellbeing. Canvassing of comparable and local schools revealed that a number, such as Hampton, Surbiton High School and Wellington, have embedded Mindfulness programmes into their curriculum, including within the Middle School year groups on which we were focused.

Our review of academic research into the use of Mindfulness in schools established that formal research so far is fairly limited – there have been four recent reviews of such provision, based on 22 published studies – but promising, with all four concluding that the programmes were generally liked and accepted, and no reports of any detrimental effects. It was posited that *"the idea and value of training the mind to pay attention on purpose, moment to moment, has been recognised for centuries among many cultures"*, and that *"school-based mindfulness training appears to offer a means for students to cultivate attentional skills as well as an array of other aptitudes that may enhance their capacity to cope with their psychosocial as well as academic challenges."* (Meiklejohn et al, 2012)[3]. It was felt that the wholly secular nature of current Mindfulness programmes was in keeping with the school's ethos and aims; in addition the finding that *"teaching students a skill-set for social and emotional well-being also supports qualities of attention, reflection and motivation that make learning effective"* (Broderick and Metz, 2009)[4] was also appealing as it tallied strongly with the school's developmental aim to embed the RGS Learning Objectives throughout our pastoral provision.

Our investigation established that an eight-week introductory programme of Mindfulness was generally considered appropriate for school-aged participants, and that for maximum chance of success it should be delivered by a committed and established practitioner. Through enquiries amongst local schools and attendance of INSET courses, we narrowed our options to a shortlist of two external providers: the charity Mind With Heart and Mindfulness in Schools' '.b' curriculum. Costs and logistical considerations led us to settle on the former for this pilot programme, to deliver an eight-week course to one Fourth Form (Y10) tutor group during morning tutor time over the Michaelmas and Lent Terms.

Weekly in-school **yoga** sessions were already popular amongst a number of RGS staff, and further anecdotal evidence, such as the use of yoga as a training exercise by a number of professional sports teams and sports scholars at Dulwich College suggested it could be of value to our boys. In particular, the more physical focus seemed likely to appeal to the age range at which our pilot was targeted. Kate Morley, who already provided the staff yoga sessions and has a long association with the RGS, agreed to lead a five-week course in the Lent Term for our focus tutor group, plus two additional one-off sessions during PSHME for all Fourth (Y10) and Fifth Form (Y11) tutor groups.

Data Collection

We were aware that attitudinal responses would be likely to provide the most useful data for our study, particularly as it would be challenging to collect meaningful statistical data over this short time frame and with such a small sample size. It was also clear that to monitor the impact of and engagement with the programmes as comprehensively as possible, we would need to survey the attitudes not only of the pupils involved but also their peers, parents and teachers.

We therefore structured a series of data-collection points around our two intervention programmes (see table below), using a combination of our own anonymous attitudinal surveys, collected through Google Forms, and the Perceived Stress Scale Questionnaire, a well-established and widely-used instrument for measuring perceived stress. We were looking at whether pupils' own evaluation of their stress levels changed after each intervention and whether they were able to give further examples of strategies which they could use to deal with stressful circumstances as a result of these programmes. However, it was clear that acceptance amongst pupils, parents and teachers was also a crucial success criterion, as our academic research showed that *"acceptability to students, teachers and schools is vital, since, unless schools want to teach and students to learn, no impacts are possible."* (Weare, 2014)[5].

Our Programme

| October	Perceived Stress Scale Questionnaire (PSSQ) 1
October-January: Tuesday tutor time	8-week Mindfulness course, Mind with Heart
December: PSHME	One-off yoga and breathing session
January	PSSQ 2 and Pupil Attitudinal Survey
February-March: Tuesday tutor time	5-week yoga course
March: PSHME	One-off yoga and breathing top-up session
April	Parental/Teacher/Pupil Attitudinal Survey
April-May: Tuesday morning tutor time	Group games, SBQ
May	PSSQ 3

Evidence

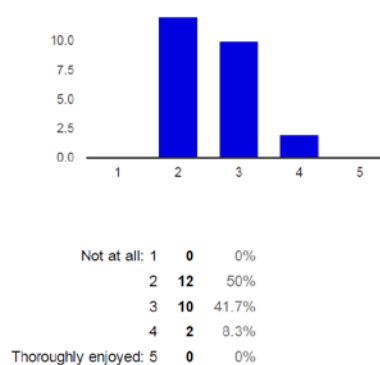The Perceived Stress Scale Questionnaire asks subjects a series of ten questions about their response to stressful situations, ranking themselves on a scale of 0-4, with lower responses suggesting a lower perception of their own stress levels. In both the group who experienced the interventions and the control tutor group, the mean stress level dropped at both measurement points in January and May. Whilst this was a positive development, it was not conclusive as regards our interventions. However, it is possible that the measurement was over too short a time-frame, or that there were too many variables involved.

The pupils' personal responses to the two different strategies were very different but both showed some similar benefits. In the attitudinal survey the pupils stated that they enjoyed the yoga sessions more than the Mindfulness. (See graphics below.)

How much did you enjoy the Yoga sessions in Tuesday Tutor time?

Not at all: 1	0	0%
2	0	0%
3	7	33.3%
4	11	52.4%
Thoroughly enjoyed: 5	3	14.3%
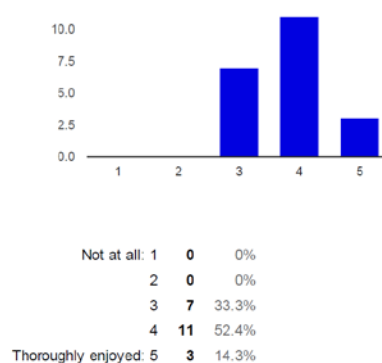
How much did you enjoy the Mindfulness sessions in Tuesday Tutor time?

Not at all: 1	0	0%
2	12	50%
3	10	41.7%
4	2	8.3%
Thoroughly enjoyed: 5	0	0%

When asked whether more sessions would be beneficial to them in the future, 22% of the pupils said "yes" to Mindfulness sessions and 95% said "yes" to yoga sessions. This was a very clear result in favour of the yoga sessions, with the main reason cited being that the pupils enjoyed the physical aspect of the sessions. For both interventions the boys commented on how there were techniques that they would use on their own, such as the 5/10 breathe routine and focus on being aware of their body, and taking time out. When asked if the pupils would use the techniques they were taught on their own, 17% said they would use the Mindfulness techniques and 46% said they would use the yoga techniques. The overriding comment about the yoga sessions was how relaxed they felt during and after the sessions. This was similar

for the one-off sessions during PSHME, with 84% of the pupils wanting more sessions and 64% saying they would use the techniques learnt.

In addition to the surveys, the pupils also completed a mind map on what strategies they feel they can use to cope with stress. Before the sessions there was a worrying number of boys who said they did not have any strategies to deal with stress. After the sessions nearly half of the pupils had added techniques they had learnt through the two different interventions. Three boys were interviewed and filmed for the presentation given to staff in which they explained the particular techniques they have used again since the sessions.

The surveys of the teachers did not give much insight into the effectiveness of these strategies and they did not perceive any differences in the pilot pupils; it is possible that we were asking too much details of them over too long a time-frame. However, the feedback from the 12 parents who completed the survey stated that 40% saw a change in the general behaviour of their son. Specific comments were made about their son being more willing to talk and how their son had discussed how much he enjoyed the yoga sessions.

Conclusions

It was clear from the attitudinal surveys that yoga was very popular with almost all pupils who participated, whether in the 5-week course or on a one-off basis. There was strong demand for further provision amongst pupils and parents. The challenge is in establishing how this can be incorporated into an already busy school day and curriculum to reach those pupils who would most benefit. Continuing to integrate one-off sessions into the Middle School PSHME curriculum appears viable and cost-effective, with an introductory session early in the year and 'top-ups' at particularly stressful points in the years. We are also investigating the possibility of further drop-in sessions before or after school on a more regular basis.

Whilst Mindfulness was much less popular amongst the focus tutor group after the novelty wore off, there were still some promising indications which suggested that it may merit further trials. In particular, it was clear that when interviewed and surveyed privately, boys were much more open about the potential benefits than in front of their peers, suggesting that group mentality may be having a negative impact on acceptance. Further, research into Mindfulness provision in schools has suggested that the weekly sessions, if not supported by independent practice, cannot securely embed good habits, and that a means of encouraging boys to follow up the techniques they have learnt independently is necessary for significant impact. We are eager to investigate further whether introducing Mindfulness lower down the school, when pupils are more receptive to new initiatives and less prone to peer pressure, and trialling alternative delivery methods, such as apps or the ".b" programme, may be more effective. To this end, it is our intention to continue our investigation over the 2016-17 academic year with Second Form tutor groups, using some of these alternative approaches in morning tutor time. In addition, the control group and the pilot group will complete the Perceived Stress Scale questionnaire whilst they prepare for their GCSEs in order to assess whether there has been a longer term benefit during heightened stress levels.

The next steps…

We will continue this programme for the next academic year to see the Fourth Form (Y10) cohort through to their GCSEs. We also believe that more can be done in terms of embedding mindfulness into school life and hope to investigate this further.

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Can the use of IT enhance creativity in the classroom?

An enquiry by **Tom Owens** (Head of Politics) and **Ash Shakeri** (History, Head of Second Form) @ RGS

Flipping the classroom

In an age when technological development is rapid, education has been understandably eager to take full advantage of these advances. As we ourselves know, many colleagues and students make fantastic use of a plethora of these; however, others are far more cautious, or even Luddite in their defence of the 'tried and tested'. In the delivery of Politics A Level, one such resource has become invaluable – that of Pre-Chewed Politics[1]. This is a subscription-based online resource that both student and teacher is able to access:

> *"Our service enables you to flip the classroom, so that the listening is done at home and the challenging debates, student questions and concerns can be discussed at school, when you are able to help."*

What this means in reality, is that students are able to utilise "the UK's first vTextbook", made up of short videos and worksheets covering the entire AS Level British Politics course. The teacher can then set tasks in advance of a lesson, enabling lesson time to be given over to the discussion and debate of content, rather than the dissemination of it itself.

We therefore wanted to assess whether or not a variety of technologies added value to both our teaching and the students' learning. This however needed framing, and with the advent of the Learning Habits programme at the RGS, we saw an obvious link. Thus, we chose to evaluate the habit of *Creativity* which is explained as: *"I (the student) am able to be imaginative, creative and/or original when I am learning."* Therefore, we wanted to see whether the use of creative technologies enhanced the learning process, and whether any (or all) needed embedding in our teaching practice.

Academic research

Our first engagement with academic literature was with *Visible Learning* by John Hattie (2009)[2]. This synthesis of over 800 meta-analyses of innovative practices in education was a natural place to easily and quickly find guidance on what approaches could work successfully. Hattie's method begins with his explanation of the 'd scale'; his tool for comparing the size of effect of numerous teaching strategies. A score of d=1 is equivalent to an increase in learning of somewhere between one and three years more in education; a 50% higher rate of learning; a two-grade increase at GCSE or a correlation coefficient between the factor being changed by the teacher and the effect on the students of r=0.5. Perhaps most simply, if a meta-analysis produces a result of d=1, then it means students receiving the new method do better than 84% of students in a control group not receiving the new method. Hattie then uses this scale to show that 'regular' teaching methods and normal adolescent development achieve a 'd score' of 0.4; meaning that a method would need to score greater than 0.4 for it to be seen as worthwhile.

We were not surprised to see that simply using computers/devices (IT) to support current teaching methods resulted in a 'd score' of 0.37; suggesting that simply using IT was actually a slight hindrance rather than a help! Anecdotally we had already seen that tasks took much longer when students were able to use IT for assistance and that a number of students actually end up becoming distracted by the use of IT and work with less focus as a result. There was a small gain (d=0.45) when IT was used intermittently to provide variety in relation to more traditional teaching methods and a more substantial increase (d=0.57) when teachers were experts in the software they were encouraging students to use and were therefore passing on IT skills. However, most encouragingly, when students were able to use IT to control and shape their own learning (d=0.6) and when students used IT in small groups (d=0.96), learning was accelerated which suggests that the true value in using IT lies in its ability to facilitate more student-led learning and more group-based learning. We were therefore keen to build a variety of directed and more open-ended tasks into our enquiry, alongside a mixture of individual and group work, to see if Hattie's findings were supported by our own research.

Regarding 'creativity', simply encouraging students to be creative resulted in significant gains (d=0.65) but the largest increase (d=0.8) was seen when opportunities to be creative came within a structured programme, when students received more guidance from their teachers about the ways in which they could be creative. This was something of a surprising discovery, as there has often been a tendency to assume that student creativity comes when teachers give them maximum freedom to complete a task. However, Hattie's research suggests that in fact students will be more creative and achieve better education outcomes where they are guided in their creativity; whether this is through teacher modelling or through more specific guidance on what should be done and how. We looked to incorporate this finding into our enquiry by using a variety of software platforms and tasks to give students varying levels of freedom in the completion of tasks.

Design of Enquiry

From the outset, we were much more focused on the production of qualitative data rather than quantitative data. This was for a variety of reasons: firstly, we felt that A2 Level and AS Level results were already strong and consistent and that any change to teaching methods would be unlikely to achieve a meaningful change in marks, even if these changes were otherwise positive. Secondly, with only 33 boys taking the subject at AS Level and 14 at A2 Level, we did not feel these numbers to be large enough to make any qualitative data meaningful or worthy of statistical analysis. Finally, since we expected motivational gains to be one of the more significant outcomes of the project, we felt the impact of 'creativity' would also be best assessed through qualitative methods.

There were three sets at AS Level politics, but only two of these were jointly taught by the teachers engaged with the research project; this meant that there would be a natural control group to whom we could compare our use of technology and methods designed to promote creativity.

Our research into which software to use progressed alongside its implementation with the students. Initially, we wanted to give students as much freedom as possible, so whilst studying the foundations of party politics as part of their AS Level students, students were requested to work in groups to produce a 'party political broadcast' from a given political party at a given time (e.g. as Disraeli's 'one nation' Conservatives). In light of the finding from this aspect of the project (see below), it seemed natural to try a more directed and less creative approach next. As such, the same group of AS Level students were now directed to work in groups to produce Microsoft PowerPoint presentations on different election systems (e.g. Single Transferable Voting), which they would present to the rest of the class. Finally, by the time students were revising for their exams, both AS and A2 students were encouraged to individually create Prezi presentations on given aspects of the course (e.g. the decline in political participation or conservativism).

Alongside the completion of these tasks, students were surveyed, both informally and formally (in small 'focus groups') for their thoughts on the various tasks; the software used and the impact on their motivation, learning, understanding and retention of information from the course.

In order to gain comparison to younger boys we also extended the reach of the enquiry to include a class of Third Form (Y9) History students. This class were given the task of creating PowerPoint presentations on various different 19ᵗʰ and 20ᵗʰ century political reform groups and presenting their findings to the rest of the class. Another Third Form (Y9) class covered the same

material using more traditional non-IT based teaching methods.

Conclusions

For each of the different types of software, and the way in which we framed the tasks, we were able to reach some reasonably firm judgements which are laid out in the following sections. These were then further developed when we conducted our surveys.

Task 1: AS Level 'party political broadcasts':

Two sets of students (numbering 22 boys in total) were divided in to groups of four/five, and allocated a specific political tradition to produce a video summary of what that tradition stood for – this varied from more contemporary examples (Thatcherism) to more historic (classical liberalism). The students were deliberately given very few specific parameters beyond this, in order for them to fully explore the creative opportunities and their own preferred choice of software. As it transpired, all chose to use either Moviemaker (Microsoft) or iMovie (Apple). (Figs. 1&2)

Figs. 1 & 2: Stills from party political broadcasts

Positives

- A high level of **creativity** was apparent
- Working in small groups enabled creativity to be explored extensively with **collaboration**
- Some of the **presentations were outstanding**, both in creative and subject-specific terms
- Students enjoyed the **freedom** to personalise their work
- Both forms of software produced effective presentations

Negatives

- Creating the videos was incredibly **time-consuming**
- The actual **'learning' gain was marginal** (i.e. students' understanding of the content was no better than when it had been delivered conventionally)
- Some **groups did not function** as well as others, leaving an individual to do all the work (limiting full creative range?)
- Some **focused too much on style** rather than substance
- Some **resented** the time-consuming nature of the task. It did not add to their motivation - that was already present in choosing the subject for A Level!

Task 2: Using Microsoft PowerPoint to present on electoral systems:

The same student groups (AS Level, – 22 students) were then set another task, using PowerPoint to create explanatory presentations to their peers on the various electoral systems adopted across the UK (Fig.3). This is a notoriously 'dry' topic, in that it entails the explanation of how specific electoral processes work (or not), but does have greater creative opportunity when it comes to evaluation of each system's strengths and weaknesses.

In contrast to the previous task, we provided far more formalised and compulsory parameters – they had to effectively teach their peers several non-negotiable elements: how the system operates, why it is used, and the pros/cons. They were also instructed to supplement the presentation with detailed notes. Again they were to work in groups (incidentally, different from their groups making videos).
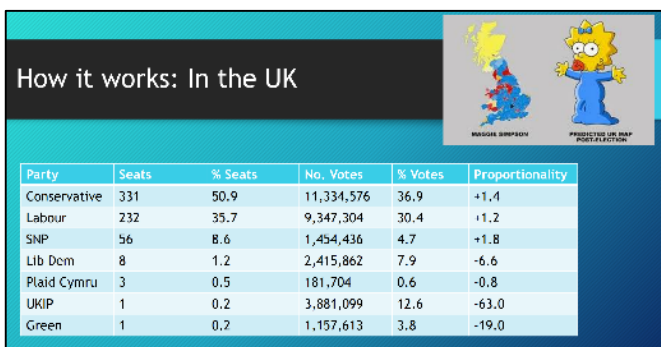

Fig. 3: PowerPoint presentation on electoral systems

Positives

- **Creativity** was evident, again generated by **collaboration** and the software usability
- The **presentations were excellent** overall – informative and comprehensive – the 'learning gain' was much greater
- The students were able to gain greater mastery of PowerPoint, particularly the adage that 'less is more' – **better selection of content**, and less emphasis on 'style over substance'
- Easier to use – **less time consuming**
- All completed resources were added to the VLE – an effective and permanent conclusion, that proved **useful for revision** later in the year

Negatives

- Less creativity was evident, as the focus had been deliberately narrowed – **less freedom**
- Again, **some students contributed more** than others
- Some felt that again, the process was still **too time-consuming** They could have been taught this much quicker in a more conventional fashion
- It had **not acted as a motivator** – most students would have still preferred a more traditional approach

Task 3: A new line of enquiry? Third Form (Y9) PowerPoint presentations:

At this point, and to offer a contrast to our Sixth Form investigation, one member of the research team decided to look at whether using PowerPoint would enhance learning for a different age group. For two reasons he chose the Third Form (Y9) History – firstly, because he had two classes (to offer contrast – see later), and secondly, because History is a compulsory subject, so student motivation may be variable.

Both classes were to investigate various political reform groups in 19th and 20th century Britain (chartists, suffragettes etc.). One class though was to generate group presentations using PowerPoint (Fig. 4), while the other was taught in a more traditional, non-IT fashion.

Fig. 4: Y9 PowerPoint on 19th century political protest

Interestingly, the results of this stand-alone exercise were significant: the group who used PowerPoint, again with strict parameters, enjoyed the process considerably, and it proved a very effective motivating tool, even with students who were going to drop the subject at the end of the academic year. Perhaps of greatest interest was the deeper understanding shown when both classes were later set the same assessment task - whilst quantitative evaluation was not part of the overall project, in this instance, the PowerPoint class performed better. This ad hoc task certainly has provided new lines of enquiry, and some of these will form the basis of future research.

Positives

- Students **enjoyed** using PowerPoint and it **increased motivation** of all
- **Deeper understanding** and **better test scores** by the class using PowerPoint

Negatives

- Completing the project **took long**er for the class using IT than the class taught using more conventional methods
- Although the average mark was higher, some students in the class using IT performed at a **lower level** than the control group – it was clear that these were the students who had **contributed little** to their group work and had **paid little attention** to the presentations given

Task 4: 'Prezi' revision presentations for A2 Politics students:

The final task involved a larger research group, this time the A2 Politics students participating alongside the AS students. As part of their revision process, for upcoming internal mock examinations, they were tasked individually, in class and beyond, to create 'Prezis': This online software package (which in its most basic form is free to use) enables students to create presentations that are non-linear (unlike PowerPoint), with the capability to act as a 'zooming' presentation tool – a 'step-up' creatively and visually (Figs. 5&6).
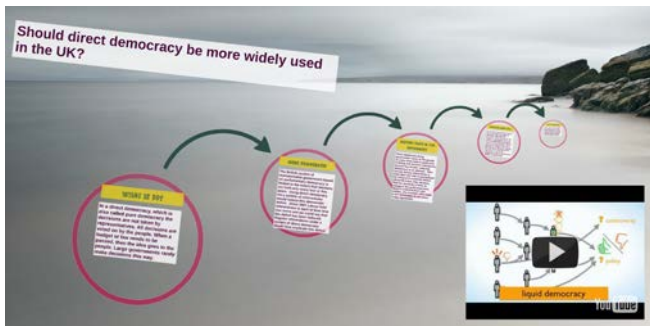

Fig. 5: Screenshot from an AS Prezi

Each student was allocated a key question pertaining to the various political ideologies they had studied at A2, or a key debate at AS – these were essay-style questions, so their presentations were essentially plans. This was therefore the key parameter – all Prezis would be shared, and should be an excellent revision tool for all. Therefore, whilst there was no group collaboration, the onus was on producing high quality Prezis that could be used by all in order to aid the revision/examination process.

Positives
• **Highly creative** end results
• **Visually outstanding** and non-linear presentations **more engaging**
• Easily **shared** with potential for **collaboration**
• Students **enjoyed** the new interface, adding music and imagery to add creativity
• Would make an excellent presentation-only resource

Negatives
• A less effective presentation tool when supporting verbal presentations than PowerPoint
• Whilst students enjoyed the process, it was **time-consuming** gaining mastery of the software
• Again, students did get distracted by **'style over substance'**
• In the end, the Prezis were of **limited use for revision**, in comparison to more traditional forms of review – they did not suit the ultimate purpose

Student surveys:

In many ways, these provided the best insight into the effectiveness of our attempts to develop creativity. Students generally felt that there was value to be gained from the use of IT resources. However, this was cautiously qualified:

1. These activities are of use only if they are well-planned and coordinated;
2. These activities should be used as the exception to 'regular' lessons rather than the norm, with a debate ensuing about what percentage of lessons should be 'different' (10-40% range);
3. At A Level most study should be 'academic' and they perceived 'creative' activities as "enjoyment" – in other words of less 'academic worth', hence they should be the exception;
4. They enjoyed the freedom of making videos but found the lack of constraints made the overall exercise flawed in terms of learning;
5. Overall, their learning was not enhanced significantly and they rejected the idea that 'deep learning' could not occur in a 'traditional' didactic lesson – also, they felt that much of it was "a waste of time";
6. Nonetheless, it was beneficial to experience alternative styles of teaching, be it creative IT work, or mind-maps, or group work to deconstruct complex questions – variety is beneficial.

Finally, they were asked some broader questions about what style of Politics A Level teaching they preferred overall. Here their responses were unanimous and relatively conservative:

• Interactive lessons with lots of Q and A;
• Lots of discussion and debate;
• Interruptible note-taking;
• As able students, they are aware of their own learning and happily like working independently;
• They want to focus on debates, but only when they have a grounding in knowledge;
• The teacher should impart the knowledge, not let them 'teach themselves'.

Final Thoughts

In many respects, the success of this research project has been significant, but perhaps in different ways than we had initially envisaged. Many of the specific conclusions reached (and evidenced above) confirmed what we had perhaps already perceived. Students do see value in the use of creative tools in the classroom, as long as the objective and parameters are clear. They also see creative activities as a valuable alternative form of teaching, to be deployed at appropriate times

and with clear 'added value' to their learning experience. However, they are also clearly very sceptical about these creative approaches replacing traditional A Level Politics teaching, whatever that may mean. To them it is being taught by an expert, but one who constantly challenges them to participate in a well-planned and evolving learning journey – with debate and discussion at the heart of everything.

Next steps

On reflection, the most significant learning outcomes for us were unforeseen. Firstly, the process of conducting a research project has enabled us to reflect on our practice, and it has thrown up a whole range of other lines of enquiry that we can pursue in the future, formally or otherwise. Second, it has highlighted how important listening to students is, when shaping a teaching programme. When a feedback session or focus group is well-directed, with open and free opinion possible, the consequences are significant.

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