Shaw Education Trust

Institute of Education

Developing A Spiral of Enquiry Approach to Reflective Practice and Action Research

A Shaw Education Trust Institute of Education Project
April – October 2021

Focus

Develop a hunch

Scan

Learn

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Take action

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WELCOME

This brochure shares and celebrates some of the reflective practice and action research projects that Shaw Education Trust colleagues participated in during the Summer Term 2021. This work was enabled through the Institute of Education and forms part of the commissioned support to schools to enable all to be world class through:

- Supporting individuals and groups to GROW towards achieving their potential
- Providing opportunities for excellent colleagues to CONTRIBUTE to the overall success of the Trust
- Enabling support and opportunities for colleagues to FLOURISH in their role, within their school and across the wider Trust family of schools.

The projects all took place during the COVID-19 pandemic, and created the opportunity for colleagues to undertake a professional enquiry using a well-researched methodology, that of the Spiral of Enquiry framework. This was developed by Helen Timperley, Linda Kaser and Judy Halbert who introduced the approach as a means to enable disciplined and collaborative reflections on our practices. They were ambitious that our reflections are driven by our professional curiosity to both celebrate what is effective, so that we can do more of that, and to enable us to explore further when and where changes in our practices may be appropriate.

We are so very grateful to those colleagues who took part in the project, particularly as this work took place in the midst of a pandemic. We are delighted to celebrate the work here of a number of our teacher researchers and we know that even more of our schools and colleagues have benefitted from other projects. We are grateful to all of you who are engaging with research, applying it to practical questions and developing high levels of expertise for the benefit of our learners and our communities. We have so much to gain from teachers who:

- Critically examine educational ideas and developments in relation to their own contexts
- Enable members of the school community to be involved in their research
- Work collaboratively to identify challenges and to consider research informed solutions
- Recognise that research is an ongoing often 'messy' process rather than a reductive set of prescribed activities
- Build on the knowledge, capabilities and experiences of others

We have benefitted from the work of the Education Endowment Foundation and recommend both their recently revised Toolkit (https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit) and in particular their Implementation Guide (https://educationendowmentfoundation.org.uk/education-evidence/guidance-reports/implementation) which encourages us to recognise that 'Schools are learning organisations. They continuously strive to do better for the children and young people in their charge…In our collective haste to do better for our pupils, new ideas are often introduced with too little consideration for how changes will be managed and what steps are needed to maximise success.' (EEF, Implementation Guide, p.3)

Within the IoE project we are ambitious to share both the steps that underpin successful practice-based enquiry, and the implementation of any changes that may be desirable, and this could include securing effective practices as well as introducing innovations. We aspire to achieve this through a collaborative and nurturing ethos, so that both teachers and learners grow, contribute and flourish.

We very much hope that these research summaries will be of value to you in your schools and settings.

The front cover shares the spiral of enquiry, and its specific stages or steps: scanning, focusing, and developing a hunch, new learning, taking action and checking. The spiral of enquiry is a framework to underpin a specific form of reflective practice and action research. It is accessible and purposeful and appropriate to all settings and phases. Many colleagues will have participated in forms of reflective practice previously. One of the significant features of this spiral, which we particularly value is the involvement of learners, their families, carers and communities. This helps to support both teacher and learner agency; as teachers and the communities that they serve help to identify and address issues in their learning environments. The spiral of enquiry approach helps us to move away from a model in which it is solely the adults that determine the changes and developments needed. Timperely, Kaser and Halbert (2014) suggest that the 'key to making the spiral of enquiry work is for everyone to approach the framework with a mindset of curiosity and genuine enquiry into what is going on for learners and then move on from there' (p.5).

It is not only the focus on and involvement of learners has attracted us to the framework, but also the value that the framework places on collaborative professional agency, so that no one teacher feels isolated or burdened by this approach. Finally we admire the way that this framework draws on the evidence base in relation to approaches to learning, particularly those summaries by the OEDC (Dumont et al, 2010) publication 'The Nature of Learning'. This report highlights seven principles of learning:

- Learners' progression is at the centre
- The social nature of learning is appreciated
- Emotions are recognised as being integral to learning
- Paying attention to individual differences matters
- It is important to stretch all learners
- Teacher's ability to sequencing knowledge to enable progression is significant
- Curriculum design should enable the building connections and knowledge accumulation.

The spiral of enquiry is therefore a particular form of reflective practice that enables us to be coherent and collaborative through focusing on evidence to develop, inform and maybe even transform our practice. On the next few pages we are delighted to share some examples of the action research carried out in our schools using this approach. Action Research is a method of systematic enquiry that teachers undertake as researchers of their own practice. The enquiry involved in Action Research is often visualised as a cyclical process, the spiral of enquiry is one example of such a process. Enquiring into practice inevitably leads us to question the assumptions and values that are often overlooked during the course of normal school life. In action research we are genuinely curious about our learners, and need to consider our context in relation to the evidence base. You will see that curiosity manifest itself through each of the following project reports.

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BROOKFIELDS SCHOOL

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Context: Stacey is both the history lead and a classroom teacher in this primary special needs setting. The pupils experience a fulfilling curriculum which 'promotes communication, independence and the development of self-help skills' (Brookfields School, 2021)

Motivation: I selected this research question because after teaching across Explorers and the Adventurers pathway, I came to think that learning through play was the most effective pedagogy for teaching history. This was particularly evident throughout a celebration day where pupils could explore historical objects and develop a richer understanding through sensory based play. This made me question, is play the most beneficial pedagogy for teaching history?

Research Process: I created a teacher questionnaire asking three questions:

1. When teaching history do your pupils have opportunities to explore objects of reference linked to the history topic?

2. When teaching history in your class, do pupils learn through play? Is there another pedagogy which suits your learners more? Can you give some examples?

3. Do you consider learning through play to be a successful pedagogy in your class

At the top of the questionnaire page, I asked for details of the age range and pathway the class were on.

Main Findings: From the answers, it was clear that despite of age or pathway, learning through play is a successful pedagogy for teaching history. The adventurer's pathway shown how learning through play was a good starter to a lesson, a way for pupils to investigate their learning before writing a diary extract or creating a fact-file, whereas the Explorer's and Early Year pathway believed exploring objects of reference and allowing the children to explore and play as well as structured work station activities was the root to successful history lessons, where learning took place.

New Learning: The research project gave insightful findings from teacher responses. To support the teaching of history, it was found that learning through play was a good pedagogy, which sat alongside structured and focussed work tasks.

Next Steps: Actions to take going forward into the new school year, is to purchase resources that support the learning of history across all pathways. I now plan to undertake a work scrutiny to ensure our pupils are being delivered rich, well resources learning through play activities that link to history.

Sharing our learning: In summary the key learning that I wish to share is:

- For the school community it is important to share pedagogies of how we teach and share resources to enrich the learning of our pupils.

- I will continue to plan history themed days for the whole school and share the learning with the school. I will also continue to ensure children have access to appropriate resources.
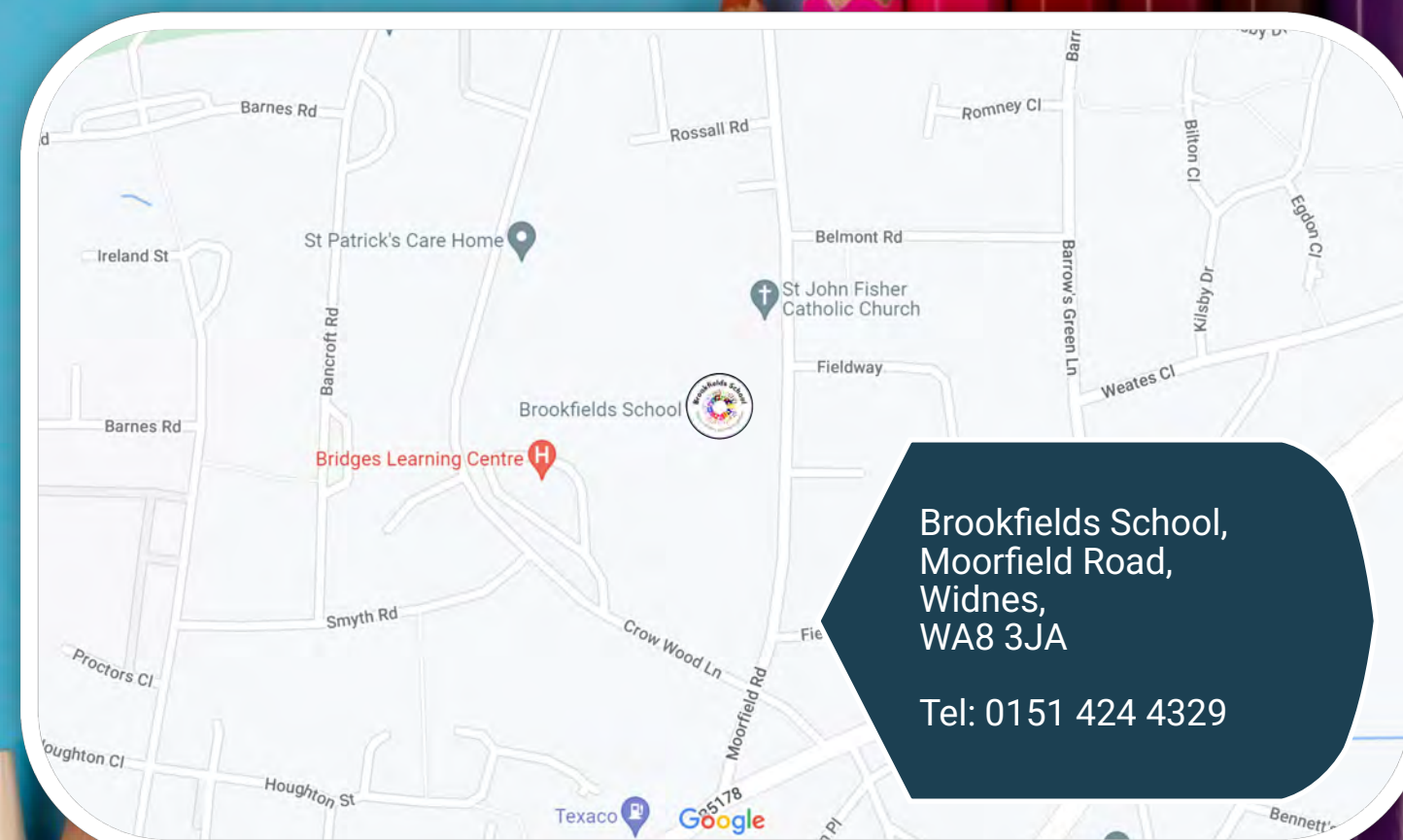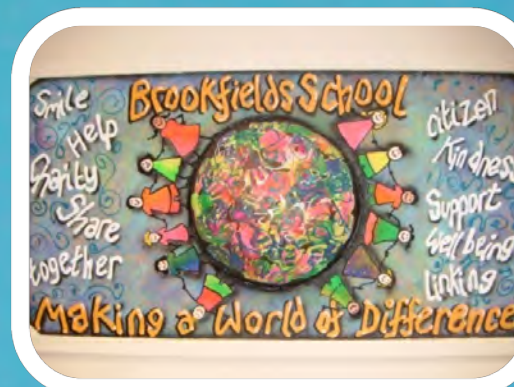
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SAXON HILL ACADEMY

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Sharing our learning: We found that the staff needed a really good grasp of Development Matters and our curriculum before we started ITMP as the approach is essentially about extending learning by building on the children's curiosity in relation to the planned for curriculum. Rather than limiting the learning through pre-determined objectives, we could notice the children's learning and extend it in relation to a collection of objectives. Knowledge of the curriculum was therefore fundament

Motivation: Karlie was eager to investigate whether 'in the moment planning' (ITMP) might aid the further development learning environments for classes within the Explorers Department within the school. Karlie was aware that ITMP had become a 'buzz' phrase within Early Years literature (Anna Ephgrave's work was particularly useful to us, https://beytc.co.uk/trainers/anna-ephgrave/). Karlie was also aware that Ofsted recognised the positive impact that ITMP was having on some settings, and so began to wonder if this could also be the case for Saxon Hill Academy.

Research Process: Karlie's hunch was that children's learning was often 'steered' in the direction desired by the teaching teams, and that this could on occasions mean that the children's interests were not met which could on occasions lead to escalations in behaviours.

- Staff visited a range of settings to explore their approaches to ITMP, as a consequence staff gained confidence as to how best to challenge and extend learning through play

- Staff agreed to develop three focused lessons each day and to build areas within the classroom that would support ITMP

- It was acknowledges that the environment is key, and so resources needed to be well organised so that they were easily accessible by the children. Resources also needed to be 'open' so that learning could be extended and enriched in relation to the objectives identified in the moment.
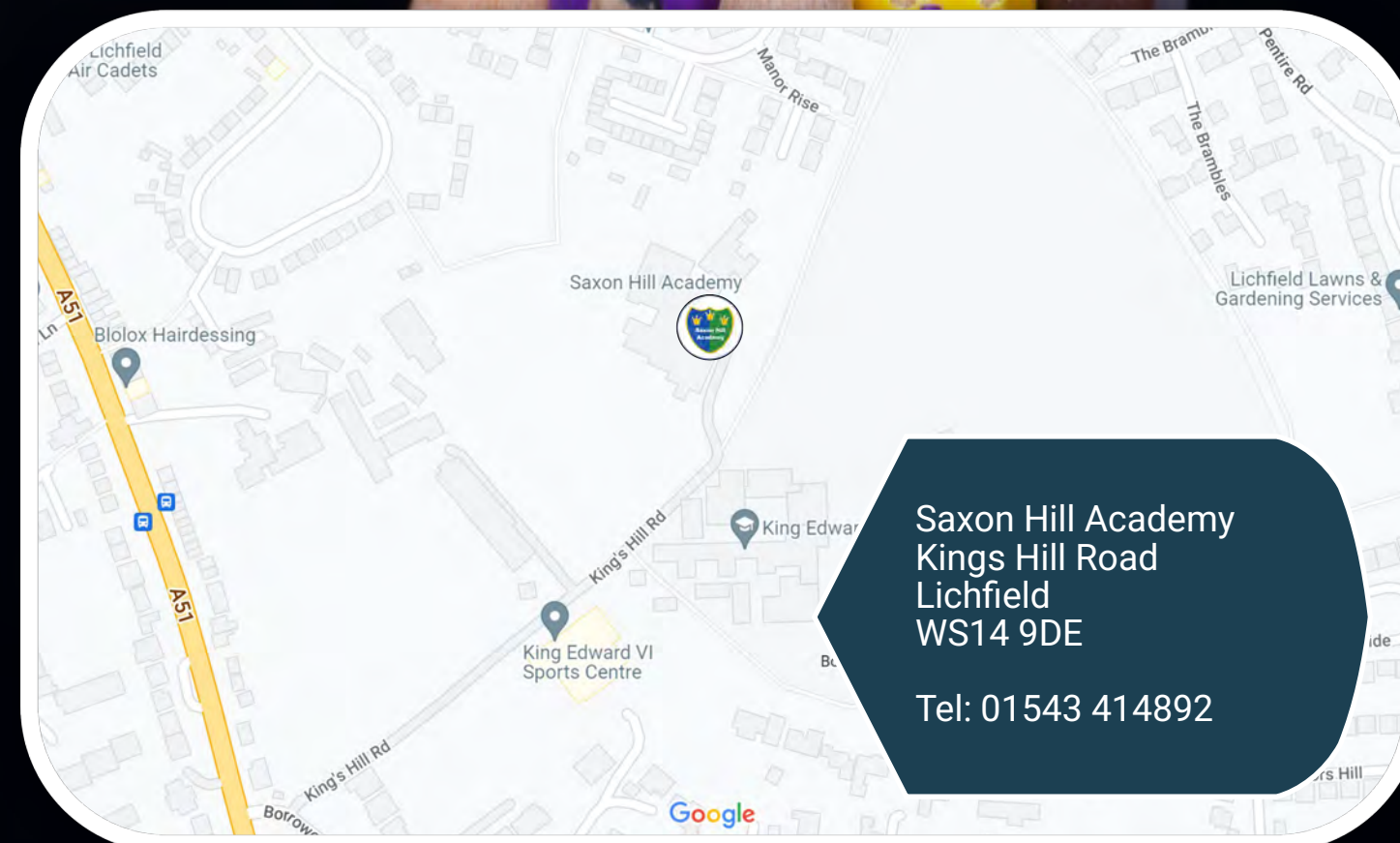
Main Findings: The staff noticed that the children loved to explore independently and often gained learning that was different to that which the teams had originally planned. Whilst this felt to be something very natural, and often the way that parents enable their children, the difference was that in a school context we have curriculum objectives to frame our assessment and planning. As a consequence of implementing ITMP staff noticed that pupils were showing higher levels of engagement through free play as well as focussed learning

New Learning: A key challenge was how best to engage sensory learners and build on their interests, one way to address this was to build staff confidence around spotting teachable moments.

Next Steps: Emily and her team plan to continue to assess how ITMP is impacting on different learners. There are discussions surrounding the use of 'Levels of Engagement' as a way of appreciating the interests of sensory learners. The team are also eager to expand the approach beyond the core areas of learning.

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IS SYSTEMATIC SYNTHETIC PHONICS ALWAYS THE MOST EFFECTIVE APPROACH FOR LEARNERS WITH AUTISM IN EYFS TO LEARN TO READ?

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Context: Vicky currently works in a special needs school which prides itself on meeting all children's needs and putting them first. She is working within a satellite EYFS class with nine children with global delay and a diagnosis of autism.

Motivation: I had a strong passion to be involved in the summer project to develop my research skills and dive deeper into how autistic children learn to read and how they can be helped further. I chose this research question because after thinking about what I would like to improve within my current class and setting, I decided I wanted to look further into autistic children starting to read and how we can improve this process and make it more enjoyable and memorable.
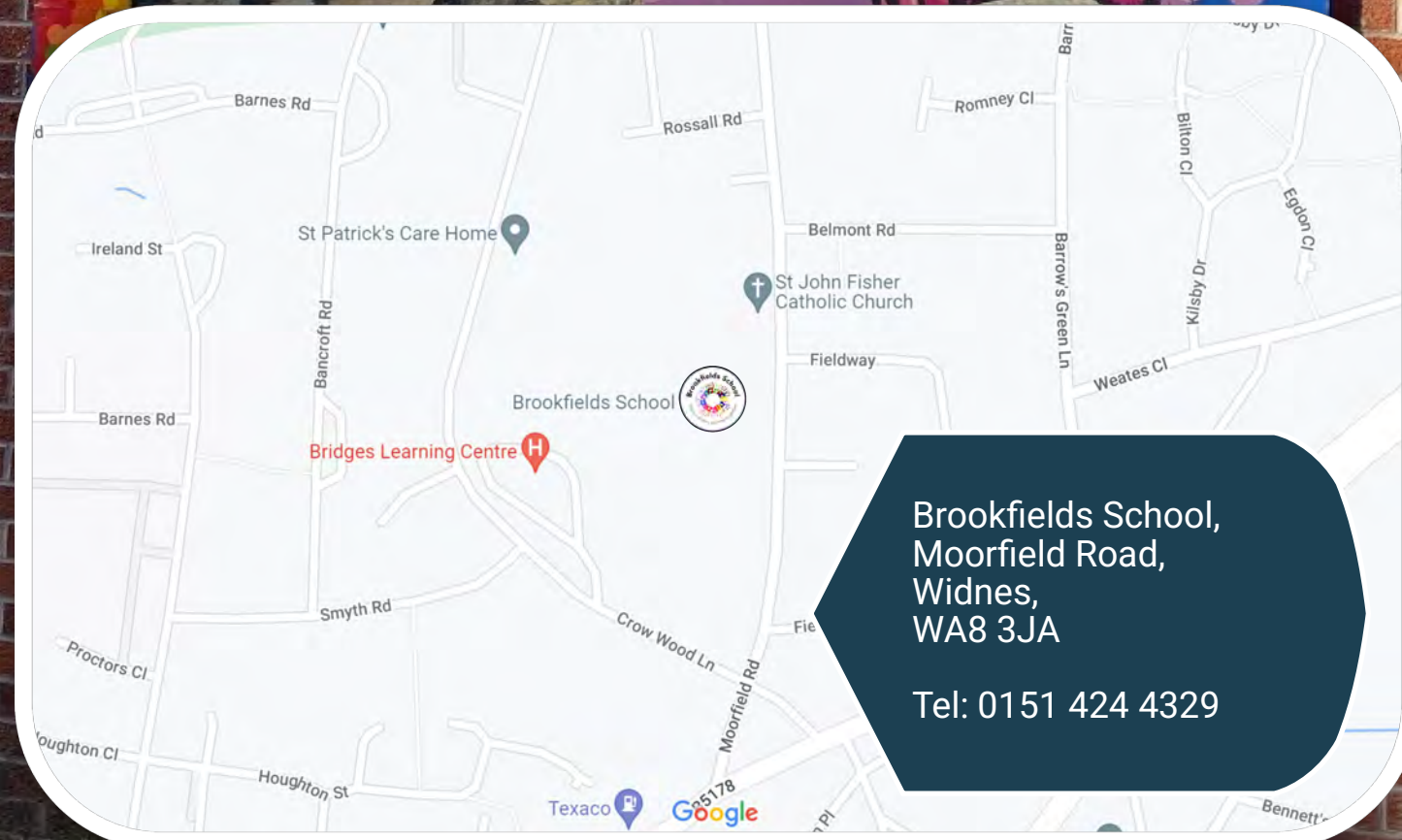
Research process: I read different articles online to see what research had already been done around my area of enquiry. My initial thoughts around the research were that I needed to have an open mindset and be open to view and use new ways to engage the evidence both in and out of school. I worried that my research would make little to no difference, however I realised the enquiry would help me understand why children with Autism learn in this way and how we can improve their learning further. During my enquiry I used the technique of observation and experiment. I made single word flash cards, with a picture of the word on the other side. I chose three children within my class to try my idea. I wanted to see the response I got from children when seeing a word and then the response to seeing the picture. I continued to repeat this activity and after 6 days one of the three children could read the words without seeing the picture.

Main findings: After two weeks all three children could read the words without seining the picture. I believe the children remembered the picture first and then when I shown them the word straight away, they related it to the picture. This was a very short observation and only with three children from one class. However, I believe this activity would need to be done with children from each class to really identify if picture and sight reading would be a beneficial technique to introduce alongside phonics. The strengths of my observation were the positive results I received from introducing pictures and sight words to read, however the cons of my study are it was on a very small scale and would need to be explored on a larger scale in the future.

New Learning: Children especially with autism respond well to visuals and learn more positively this way.

Next Steps: I will know I have made a positive difference by continuing to improve the reading levels within my class and talking to other teachers within the school about how they teach reading other than phonics.

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Context: Emily is a middle leader with responsibility for the secondary curriculum within the school. PODD was developed in Australia by Gayle Porter, a Speech Pathologist specialising in complex communication needs. PODD (Pragmatic Organisation Dynamic Display) is a communication system consisting of aided language displays, communication books and high-tech communication software that supports learners with limited verbal communication.

Motivation: As Emily became the secondary lead within the school, she had a hunch that there were inconsistencies in the use of communication strategies within the school. Emily wondered if this lack of consistency was negatively impacting on pupil achievement, as an attainment gap between verbal and non-verbal pupils had been identified. Emily was therefore keen to explore whether the use of PODD might aid a more consistent approach.

Research Process: Emily researched PODD before introducing it to the staff. This was done in a carefully structured way. The initial focus was on the use of language displays before progressing to the creation of PODD books. Initially the aim was to incorporate PODD into daily routines and lessons for non-verbal pupils or for those learners with limited verbal communication. The staff were very willing, but in order to deepen a collaborative approach, Emily asked teachers to select one pupil who was struggling to engage with or use the PODD resources available. Collectively the staff considered what the pupil's barriers were: physical, sensory, visual etc. They then edited the layout of the resources, and ensured that pupils would be able to benefit from regular modelling and exposure to these resources in a variety of contexts. To support staff with this, Emily recorded videos of herself using PODD.
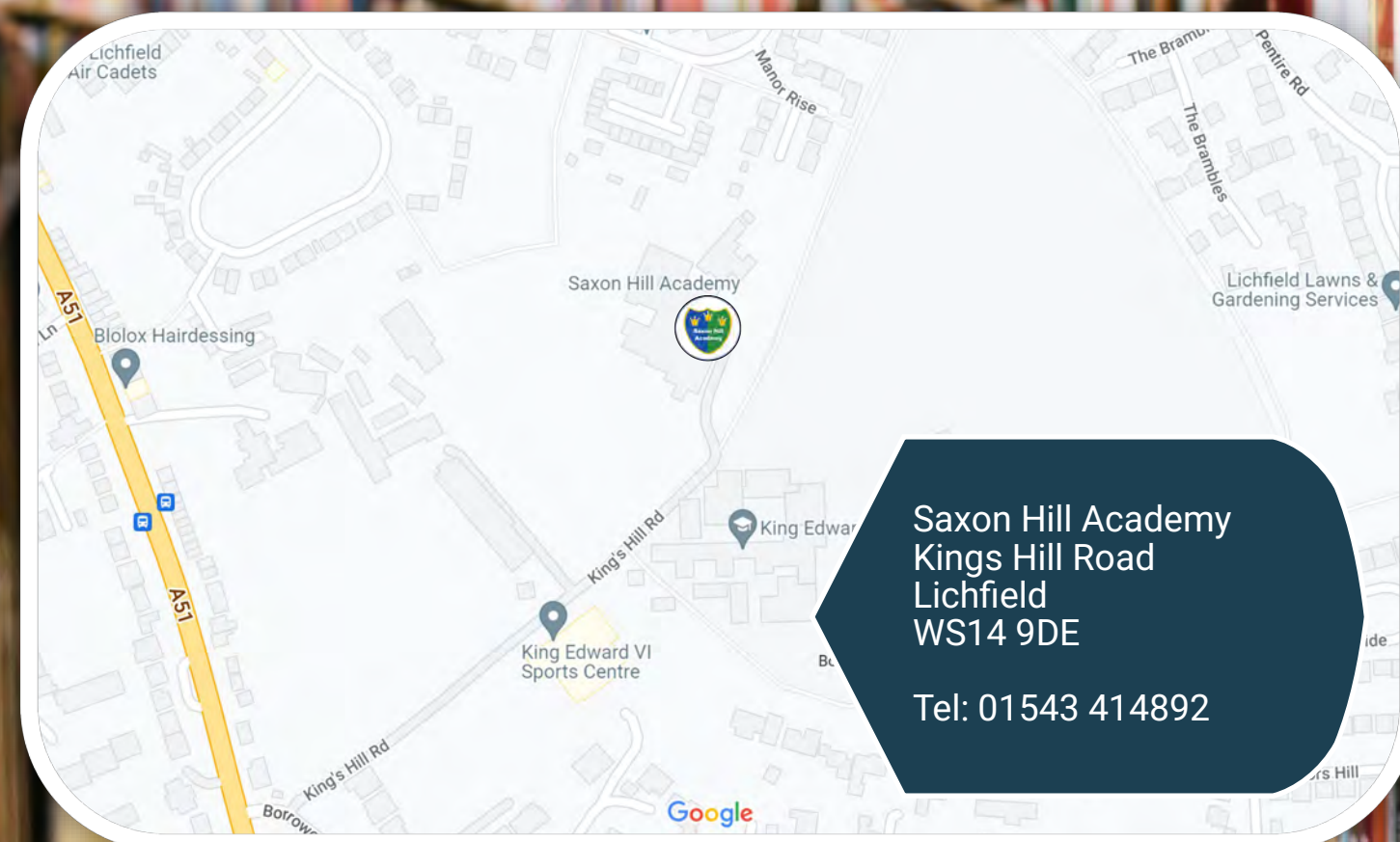
Main Findings: At the end of the project data suggested that the school's consistent effective use of PODD has helped close the attainment gap between non-verbal pupils and their verbal peers in English. Significantly more non-verbal pupils met or exceeded expectations in English in June 2021 than in June 2019. The staff surveys show an increase in staff confidence using PODD across the whole school and the learning walks demonstrated an increase in effective use of PODD in all classes.

New Learning: Consistency and sustainability are key. In this extract Emily has shared a small part of a larger journey in relation to Saxon Hill's 'total communication' approach. A long term perspective has been taking

Next Steps: Although the results are promising, moving forwards Emily would like to continue to provide additional staff training and support sessions to further improve the use of specifically PODD books and high-tech PODD aids

Sharing our learning: This project's specific aim was to focus on attainment and progress in English, but in order for PODD to be successful we would suggest that it is best incorporated into all lessons, daily routes and social time.

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Sharing our learning: PHSE and RSE can be a challenging area of the curriculum for all learners. Creating the time and space to discuss and share resources and issues in relation to a focussed plan has enabled a strengthening of our subject knowledge. The support of subject associations (https://www.subjectassociations.org.uk/) , such as the PSHE can be very enabling, as these organisations are often run by teachers for teachers.

Context: Wendy is both a middle leader and vocational lead with responsibility for the development of the PSHE/RSE curriculum within the school.

Motivation: Wendy has begun to notice that at Hub meetings many colleagues felt that resources to support staff in the development of their PSHE and RSE curriculum for SEND learners were limited. This is a highly significant area of learning for all pupils, but particularly for learners with more complex needs. Identifying and responding to any resourcing gaps would help to improve staff capacity and capability and consequently enable effective learning for our pupils.

Research Process: Wendy followed her hunch and developed a three year curriculum overview and policy so as to be able both explore the extent of any existing limitations in terms of resources and also how to address these. The plan and policy were informed by the Statutory Guidance Notes for RSE, the Ofsted inspection framework – in particular the guidance in relation to deep dives. Materials from the PSHE association were also accessed (https://pshe-association.org.uk/).

1. A resource review was undertaken in relation to the three-year plan and policy

2. Resources were accessed and reviewed in relation to specific areas of the curriculum.

3. A collaborative ethos was established, encouraging the sharing of ideas so that further resources could be developed. Teachers were encouraged to plan lessons using these materials, and given confidence to 'slow down so as to make learning meaningful and appropriate'
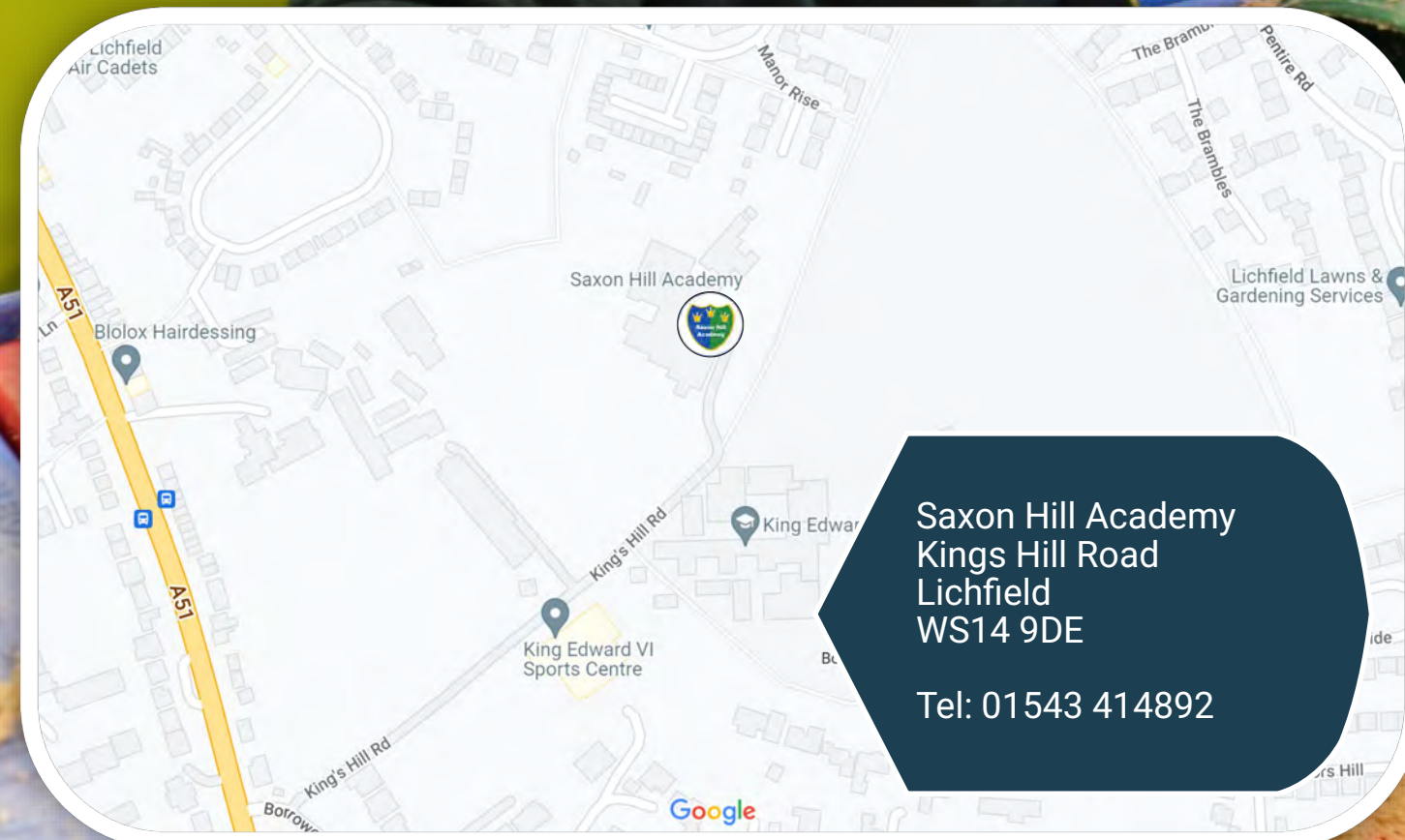
Main Findings: Wendy's initial hunch was confirmed through her detailed research. The creation of a policy and three-year plan provided an organisational framework for the research. This revealed the particular limitations of existing resources and created the opportunity for collaborative development.

New Learning: Sharing the plan, policy and resources improved the quality of communication and focused discussions and enabled a prioritisation of which areas needed resourcing further. Staff were enabled to feel more confident regarding the legislation and requirements in relation to a diverse range of learners.

Next Steps: This research will help to inform the future adaptions to both the curriculum and the policy. We are taking an evolutionary approach. We will continue to discuss and share and together we can strengthen our curriculum offer.

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Context: Hollie is Director of EAL at Fortis Academy and Nuri is Assistant Director for Senior Academy. Hollie and Nuri had noticed that for newly arrived EAL students there was a delay in the development of their spoken language that was not replicated in their reading and writing skills

Motivation: This finding was inconsistent with previous published research and so lead to an investigation as to why there was a delay in spoken language, was it that there was a curriculum barrier?

Research process: Assessment data was analysed for 13 newly arrived (within 6 months) EAL students from a range of ages, home languages, genders and ethnicities. For all, speaking was the weakest of the five skills assessed. Writing was thought to be the most challenging skill to acquire and yet written work did not demonstrate the same delay. A review of the EAL curriculum was undertaken.

Main findings: the review demonstrated that there were insufficient opportunities for students to practice and develop their spoken language. We also found that the assessment of reading was often delivered through writing when it could be assessed orally. The student voice activity also gave insight to monolingual friendship groups which limited opportunities to practice social language.

New Learning: As part of the researcher's professional learning thie year, they have benefitted from Philosophy for Children training. This is a dialogic approach to developing reasoning capabilities and has positive effects on children's social, emotional and cognitive development. We decided to implement a P4C session in the afternoon to support holistic learning. At the end of the sessions the student voice responses suggested that they were now more confident speaking in the context of an EAL session but were still anxious about speaking in a mainstream lesson.

Next Steps: Both our assessment data and student voice activities have shown a positive impact of P4C for EAL learners, in relation to confidence and self-esteem as well as cognitive capabilities. As a consequence we will continue with weekly P4C sessions. We also plan to offer whole school P4C professional learning.

Sharing our Learning: working together and using data, student voice and curriculum maps has offered a deeper insight. Our conclusions are tentative, and so we will continue to evaluate the impact of the P4C sessions.

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WOODHEY HIGH SCHOOL

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Context: After attending the Whole Education conference earlier this year and hearing a lot about student voice and student agency, I started to look more into student agency in particular, a subject that I honestly have never heard mention of during my teacher training nor during the subsequent 4 years of teaching. The OECD defines student agency as 'the capacity to set a goal, reflect and act responsibly to effect change. It is about acting rather than being acted upon; shaping rather than being shaped; and making responsible decisions and choices rather than accepting those determined by others', they also make the point that there is 'no global consensus on the definition of "student agency" and their definition is seen through the lens of their 'Learning Compass 2030' initiative. (OECD, p.2). This definition struck a chord as I have recently been wondering how much education happens to students rather than students feeding ideas and feedback into the mechanisms that are supposed to be there to support and guide them.

Motivation: At this stage I felt that it was important to gather some initial ideas about the level of control that students feel that they currently have in their learning within the school and the level of agency that they would like to have in their ideal learning environment. This Spirals project therefore became predominantly about information gathering focused on students' perceptions in order to better understand the starting point of any future research project.

Research process: The scanning stage comprised two elements; the first was background research, but due to the brevity of this project, this was limited to two sources. Secondly, a student questionnaire was designed that aimed to gather students' perception of their current learning environment and the level of control that they feel they have now, it also looked at how much control they feel that they would like to have in their learning process.

Main findings: The questionnaire data showed that the majority of students were in favour of having more input into what is studied and how it is studied, but interestingly there was very mixed feelings about project work and conducting their own research on a given subject. The data seemingly shows that the students want more of a say in content and methods of teaching, but not so much in having to work independently to find or manipulate information; their preferred method of receiving information is still based on the traditional teacher-led delivery in lessons.
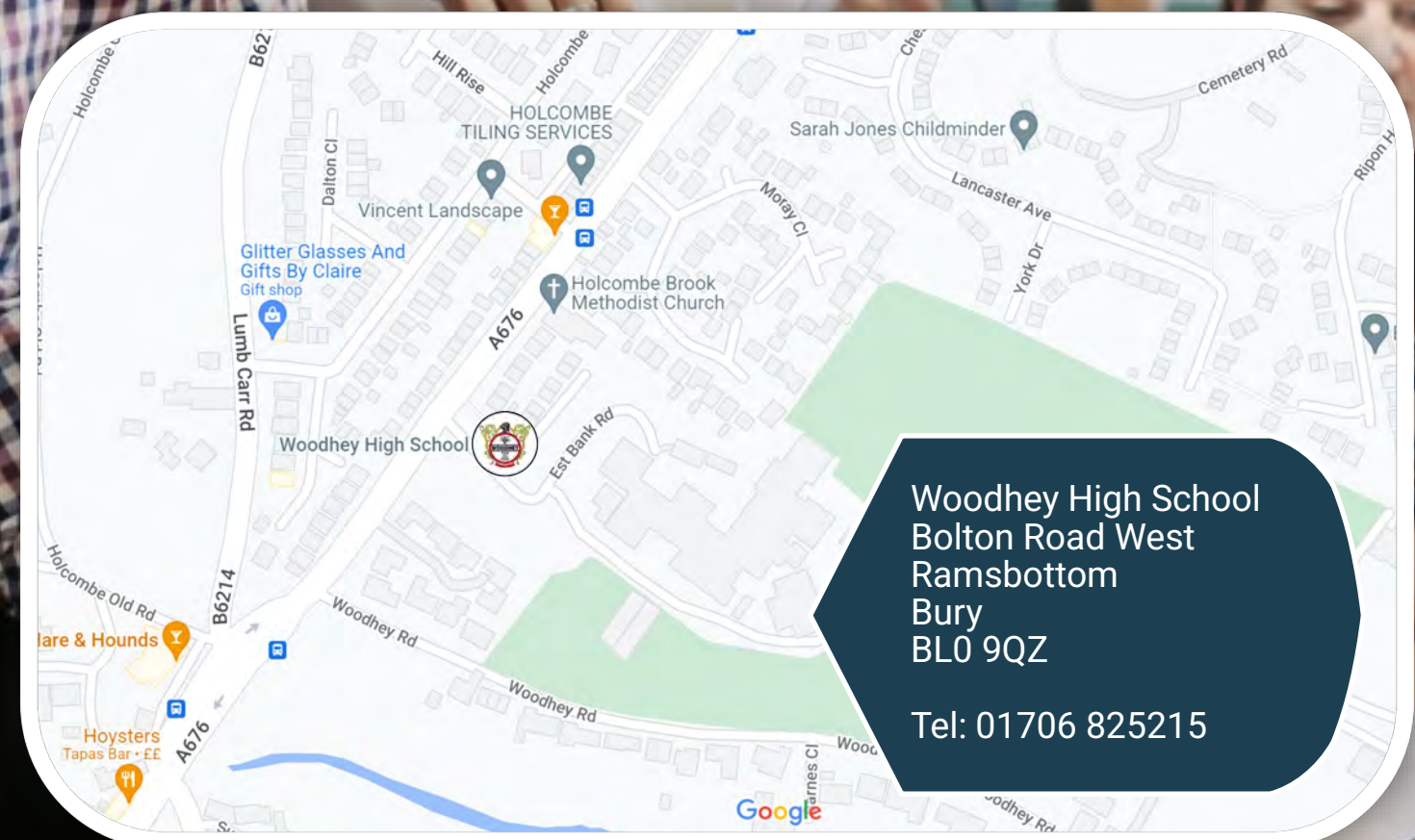
New Learning: There are many areas that the scanning stage has highlighted that require further research before repeating the scanning stage in order to move closer to a hunch.

- More research is needed into the positive and negative outcomes that may affect students when introducing and developing greater levels of student agency in the classroom, but in particular those that could adversely affect disadvantaged students and the remedial support that could be put in place to mitigate any negative impacts.

- Better understanding is needed as to the practicalities of approaches and activities that can be used in a lesson to help promote and develop student agency.

- Research the links between levels of independence and resilience in students.

- Looking at ways in which levels of independence and resilience can be measured to evidence any benefits created by the increase in student agency within the classroom

Next Steps: In the next academic year, I am looking to delve further into research and practice surrounding the increase of student agency within the classroom and the changes that could potentially be seen in the resulting levels of student resilience and independence.

Sharing our Learning: I believe more than ever that students could greatly benefit from being shown ways to better exercise their own agency in the school environment, firstly in lessons and then hopefully across the school day. I feel that we have a wider responsibility to ensure that our students leave the school with the ability to move with agency through their next steps in life and that this power of agency is something that will serve them throughout their lives – an ambitious hope, but I hope a realistic one.

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IF PUPILS DEVELOPED THEIR COMMUNICATION SKILLS, COULD THEY THEN IMPROVE THEIR SEMH OUTCOMES AND THEREFORE SPEND MORE TIME IN LESSONS?

BLACKFRIARS ACADEMY

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Context: the researcher noticed that there was:

- an increasing focus on the SEMH needs of the pupils.
- personal development as part of the new Ofsted framework
- an increased role of Clinical psychologist in school and pupils being referred to her.
- An increase in the number of pupils missing lessons to go out of class to see psychologist
- a number of pupils therefore missing the sequencing of learning which in itself creates a new problem of pupils not making the academic progress I am ambitious for.

Motivation: Could it be possible to upskill and enable pupils with SEMH needs to improve their communication strategies so that they can spend more time in lessons and less time in counselling and psychology sessions?

Research process: I researched whether poor communication skills can impact on pupils' SEMH and academic outcomes and found a plethora of evidence to support my hunch. I mustn't confuse correlation with causation, but supporting young people in developing their communication seems to be important for a range of reasons. Having established the link between poor language and/or communication skills and poor SEMH (as well as academic outcomes), I researched how to develop pupils' communication skills in schools.

Main findings: As a consequence of the research we are keen to embed developing COMMUNICATION as an integral part of school across all classes with all staff through:

- TAs following a performance management process written and devised by the researcher- linked to a shared vision of improving communication skills. TAs will be given guidance in relation to developing communication in line with the research accessed through the project
- Article and tips for parents will be shared in a newsletter
- Pupil's will receive rewards for good communication.

New Learning: The implementation decisions are now clearly research and evidence informed

Next Steps: To evaluate the impact of the changes that we have made, and then we will be ready to share our learning
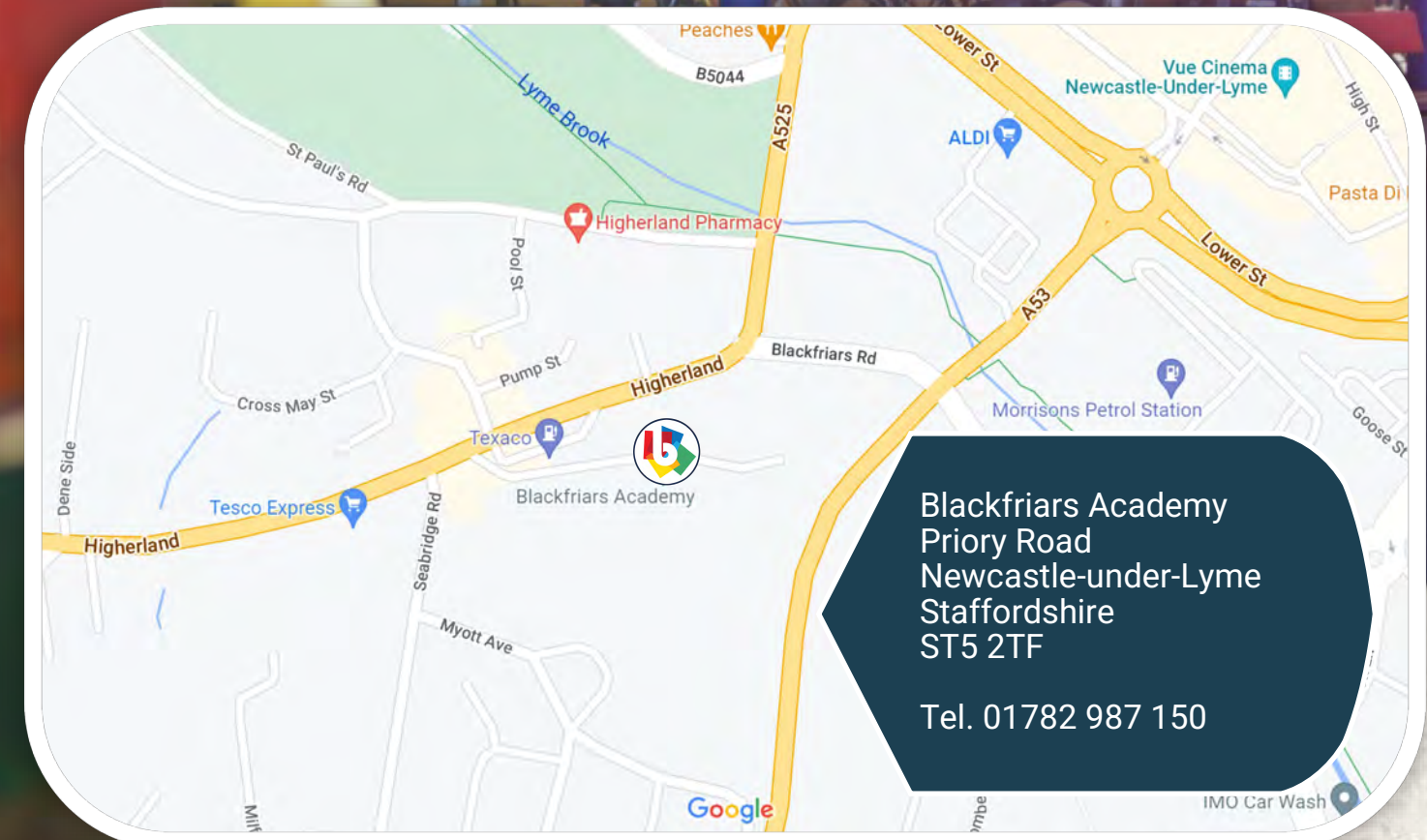
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Sharing our learning: Peter Dudley, who introduced Lesson Study to the UK in 2011, recognised that teaching is an ever-evolving profession and one in which you need to constantly evaluate and develop your practice. We have found lesson-study to be a collaborative way to do this.

Context: Bronwen is both a middle leader and a SCIPr-UK trainer (https://www.proact-scipr-uk.com/proact-scipr-uk/)PROACT-SCIPr-UK® – Positive Range of Options to Avoid Crisis and use Therapy – is a person – centred approach to support. PROACT-SCIPr-UK® is a values-based approach with an emphasis on being proactive – getting it right for the person, rather than being reactive or responding to an episode of challenging behaviour. The aim is to raise the person's self-esteem, improve quality of life, empower them and enable them to live a more independent and fulfilling lifestyle.

Motivation: Bronwen wanted to focus on her drama lessons so as to develop her expertise. To do this she used lesson study (https://lessonstudy.co.uk/) to help her to focus on behaviour management. This offered a collaborative and development approach in relation to behaviour systems such as SCIPr-UK. Browen particularly developed her use of positive praise, through her focus on rules and procedures, teacher / student relationships and the use of appropriate interventions.

Research Process: I selected a focus on my use of positive praise

1. I shared my short and medium term plans with a colleague so that we could engage in a dialogue about my planned approaches

2. We re-planned the lesson together to include more physical activities. The plan was carefully sequenced and was consistent with the SCIPr-UK approaches used in the school.

3. After teaching the lesson, I analysed the approaches with my colleague, so that we could develop our practices together
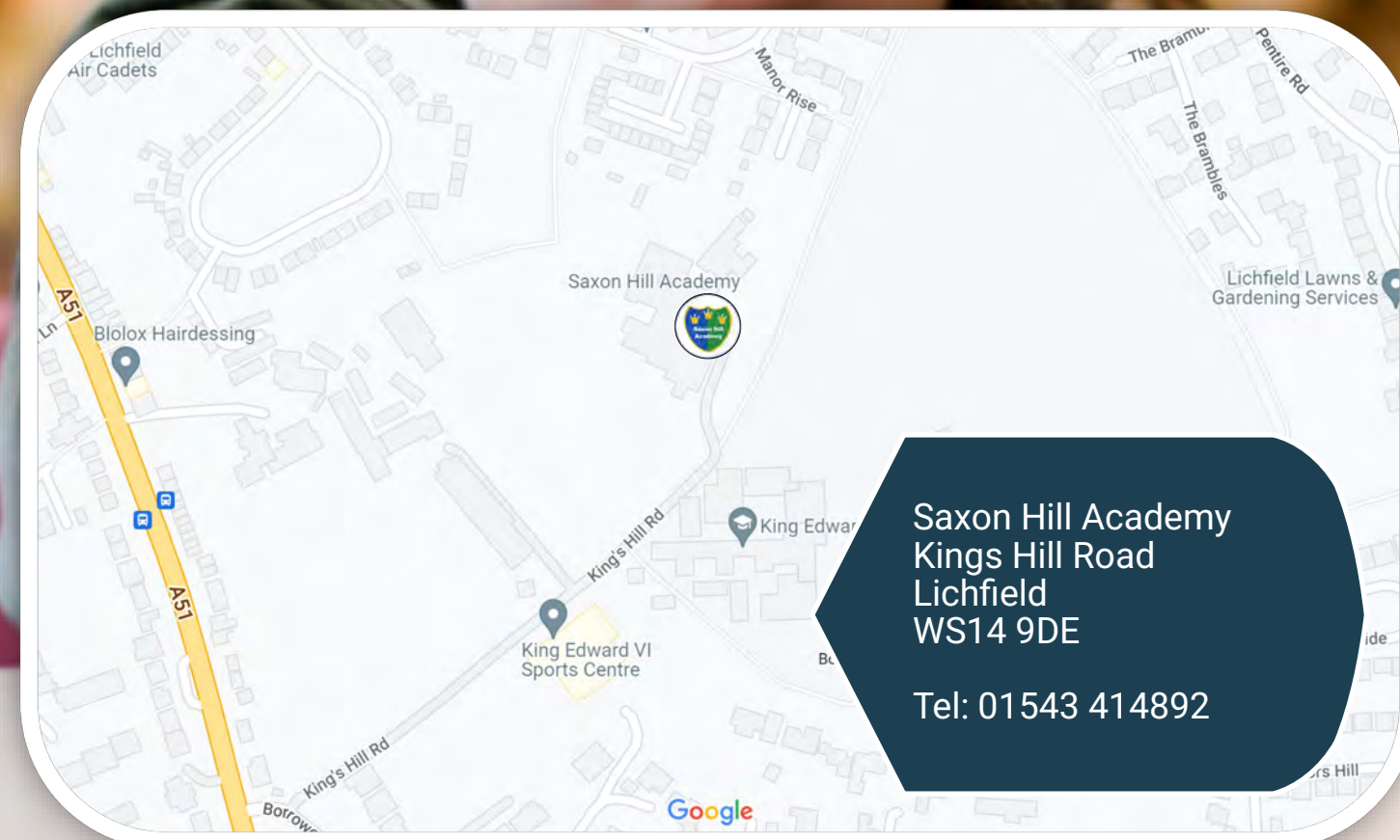
Main Findings: By focusing on an aspect of behaviour management and working collaboratively with a colleague, I was able to bring my knowledge to life. Reading research is important, but then its impact on learning within the classroom benefits from being carefully analysed.

New Learning: After completing lesson study, I believe that my pedagogical judgement is 'more expert' and so I am able to make more informed judgements, more quickly and fluently. This impacts positively on the student's behaviour through their increased engagement in the lesson.

Next Steps: Lesson study helped make my pedagogical judgements visible so that they could be analysed collaboratively. I plan to continue to use this approach in relation to other apsects of my teaching.

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Context: Tanya is the Deputy Head and Research Lead for Endon High School. Research is central to the development of the school, with all staff undertaking a research project over a 12-14 week period. This has been informed by the work of the Education Endowment Foundation Research School ethos and in particular the approach modelled by Huntingdon Research School, York. This approach is consistent with the Spirals methodology.

Motivation: I wanted to be able to identify clear areas for intervention post lockdown. The intervention could relate to each lesson and be a form of regular, independent practice. It would need to be challenging and robust and result in high engagement but have low impact on workload.

Research Process: Multiple choice questions (MCQs) were selected as a form of assessment as they reveal misconceptions as well as checking knowledge and understanding. I drew on research from Fletcher-Wood, Willingham and Kirby. The process was as follows:

1. MCQs were set each week for each unit of work and students had one week in which to complete them. The ideal being that they responded the night before so as to maximise the time between teaching and recall.

2. Each set of MCQs included questions that related to prior knowledge, including content taught in the previous lesson. The questions were clear and concise with 3-4 possible answers. Each question focused on an aspect of knowledge-that or knowledge-how

3. Misconceptions could then be addressed quickly.

Main Findings: Engagement in homework, increased week on week. It was clear that MCQs did highlight both knowledge and misconceptions. When compared with a similar group that did not benefit from this intervention, a 10% increase was noted in the exam average mark.

New Learning: MCQs used in this way offer a rigorous way to test understanding, highlight misconceptions, increase engagement and reduce workload. Students benefitted from immediate feedback and clear explanations, reducing misconceptions. MCQs are challenging and help to underpin a well-sequenced rigorous curriculum – there is a misconception that MCQs are an easy option.

Next Steps: We are keen to expand this approach to include other curriculum areas. We are also exploring their used within lessons.

Sharing our learning: In summary the key learning that I wish to share is:

MCQs are hard to write well. Whilst this is time-consuming, it is well worth the effort. Using firefly helped reduce the workload involved in marking and uploading

Students need to be supported in reading and responding carefully to MCQs so that the benefit is maximised.
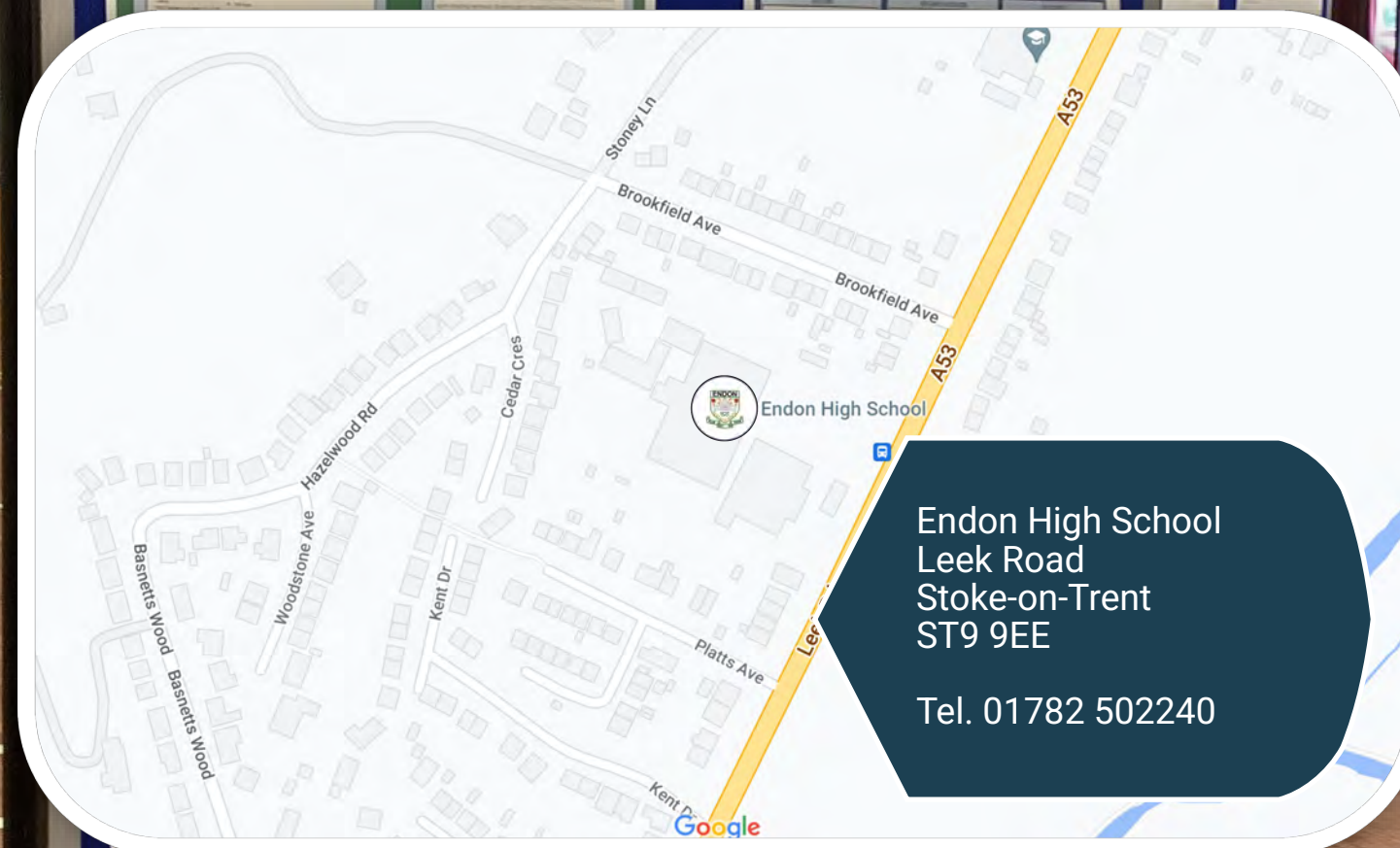
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ENDON HIGH SCHOOL

Researcher| James Townend

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Context: James is a member of the History team, and participates in the research activities within the school. This research project was conducted in relation to topics taught during a period of remote learning. As recall is a key capability within History, knowing propositional knowledge underpins conceptual understanding, I was eager to explore whether lockdown learning had had any impact on pupil outcomes. I was influenced by the work of Kate Jones and Tom Sherrington.

Motivation: I wanted to be able to investigate the impact of regular but different styles of retrieval based starter activities. As the pupils had been taught remotely, it was a good opportunity to explore the extent to which they could recall information that had been taught through an online mechanism.

Research Process: During the 12 weeks of the research inquiry, I developed a number of different retrieval based starters to use with 2 groups of Year 10 students. I also had one class as a control group who did not experience the starter activities.

Main Findings: The retrieval starter activities had a positive impact of the two groups who experienced the intervention with one group increasing their average tests score from 25 to 30 out of 45, and the other increasing from 28 to 45. The control group increased from 27 to 29. In the control group 48% of pupils increased their score between the two tests, whereas in the other two classes 72% and 82% increased their scores.

New Learning: Retrieval activities enable both teachers and pupils to be more conscious of the significance of both the sequence of the curriculum but also how knowledge builds cumulatively.

Next Steps: We are eager to see what the impact might be in their mock exam results – can the pupils use the knowledge that they can recall so as to develop answers that show a more complex understanding in relation to exam questions?

Sharing our learning: In summary the key learning that I wish to share is:

- Retrieval is, of course only one form of pedagogy, but this research has demonstrated that it can be very useful for both identifying gaps in knowledge and helping the teacher to then sequence their teaching so as to 'plug' these gaps.

- We hope to be able to observe each other in our use of retrieval activities so as to further develop expertise within the department and across the school.
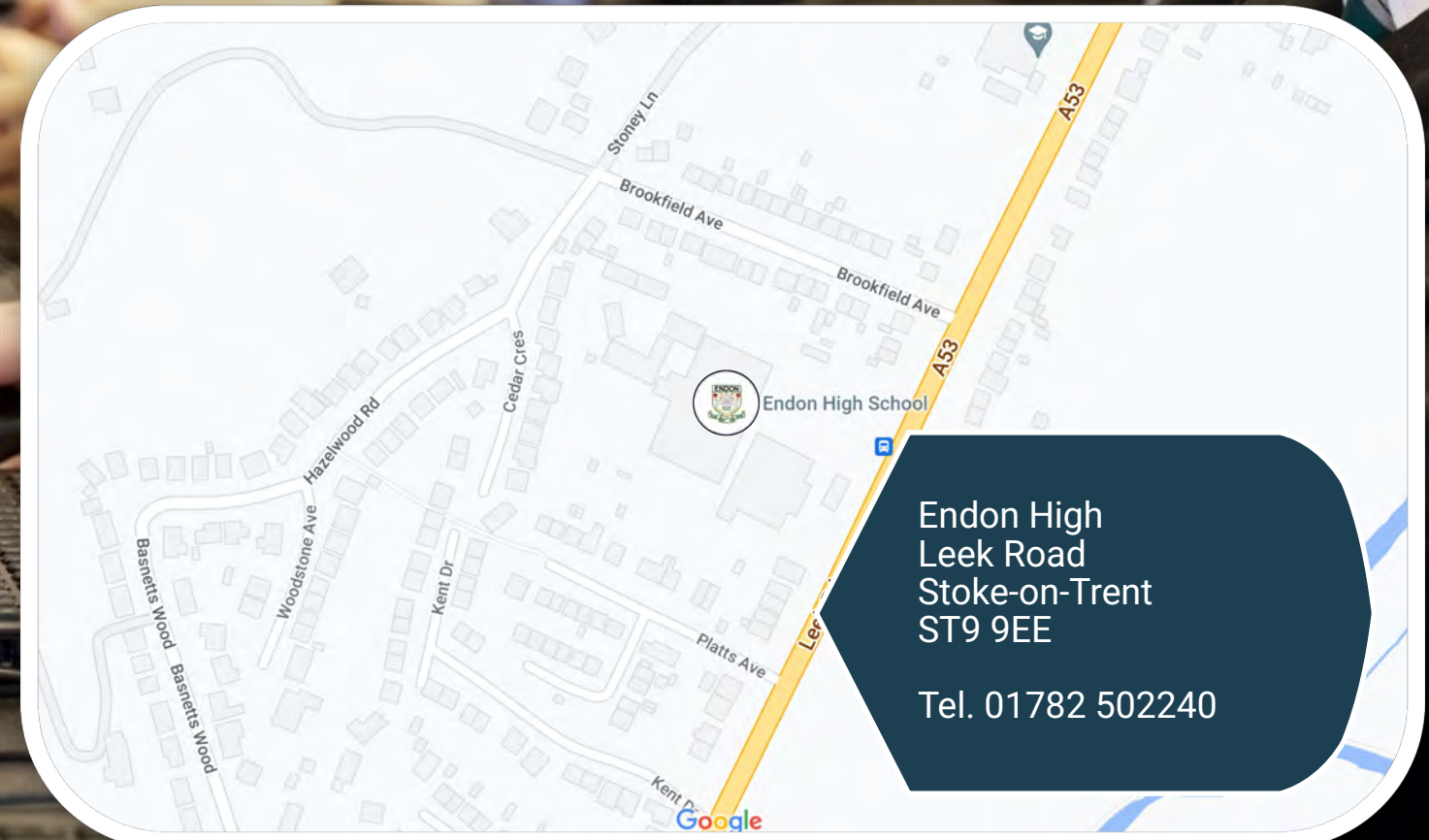
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ENDON HIGH SCHOOL

Researcher| Shaun Mitchell

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Context: Shaun is a member of the Design and Technology team, and participates in the ongoing research activities within the school. This research project was conducted drawing on the work of Tom Sherrington and Oliver Caviglioli in relation to the 'Walkthru' publications (https://www.walkthrus.co.uk/). It particularly focused on the use of the 'backward fading' (see footnote) technique in relation to a GCSE class. This has been informed by the work of cognitive psychologists.

Motivation: I wanted to be able to investigate the impact of the 'backward fading' technique with a Year 10 GCSE group, who did not always grasp concepts rapidly. I was particularly curious to investigate if the technique had a positive impact on their ability to structure their response to GCSE style questions. These longer questions have often presented a challenge to pupils who struggle to structure their thinking independently.

Research Process: I have prioritised analysing responses to the longer exam questions that require students to be able to scaffold a response independently. I gave the pupils a pre-test to determine their understanding. I worked with two classes, only one of which engaged with the 'backward fading' technique. I used the Walkthru book as a guide. The techniques is based on research that suggests that cognitive load is reduced by separating learning a method from the specific content required. One the method has been secured then it can be applied to different content.

Main Findings: The use of the technique altered my approach as a teacher and impacted positively on a group of Year 10 pupils who had previously struggled to structure their responses to longer exam questions. I analysed their marks and it was clear that the intervention group's marks improved when compared to the control.

New Learning: Taking the time to plan out the answer as a teacher to create a fully worked example has had a positive impact on the confidence of our Year 10 pupils.

Next Steps: We plan to extend the approach to all Year 10 pupils and to introduce the technique to Year 9.

Sharing our learning: In summary the key learning that I wish to share is:

- That the use of worked examples that make explicit how to structure a response as well as the content had a positive impact in enabling learners to internalise a technique. This increased their independence.

[1]From Walkthrus – the 'backward fading' technique suggests that pupils who are new to an idea, learn more successfully from studying a series of completed worked examples than by being asked to solve a task completely independently.

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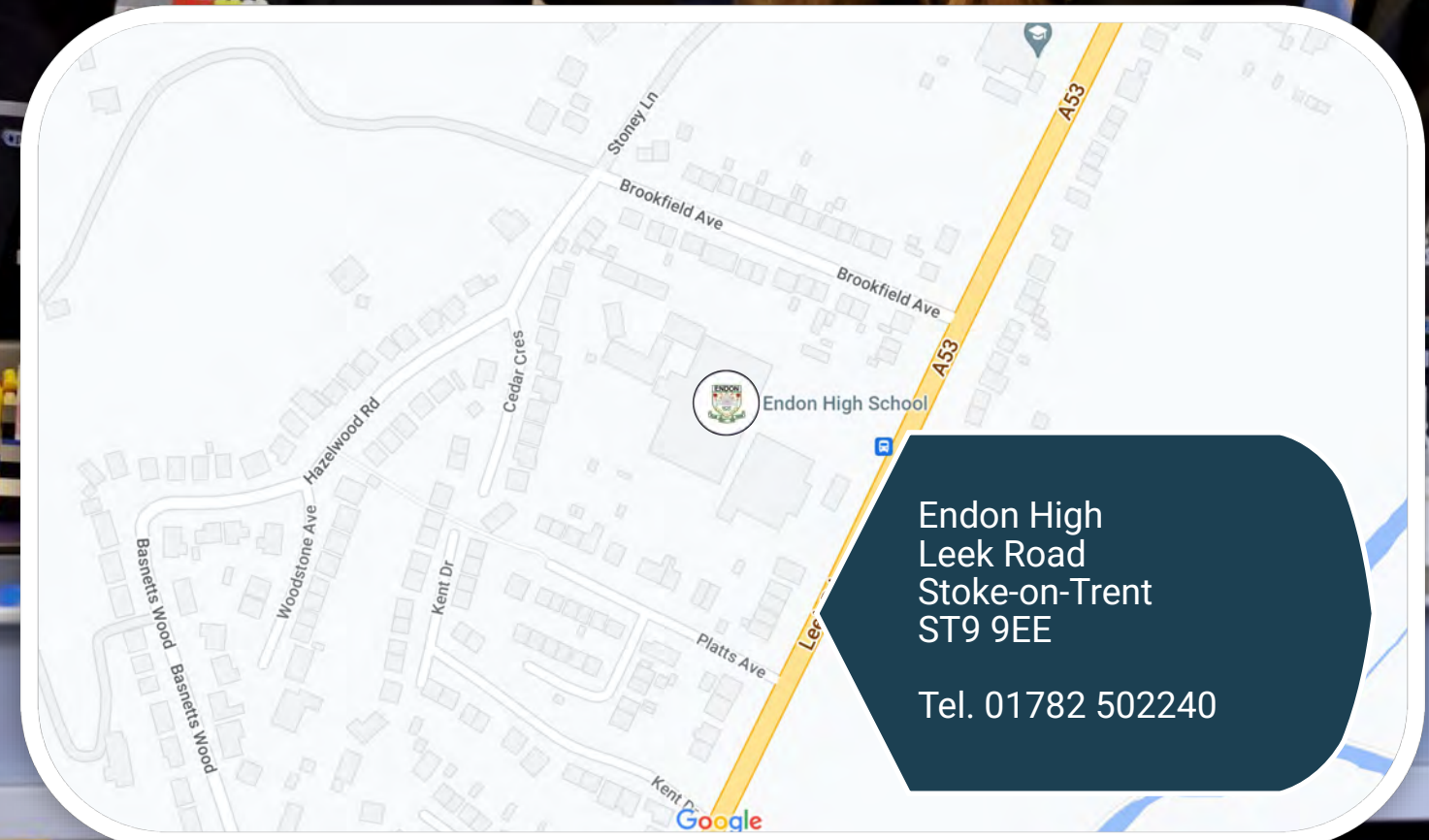
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Researcher| James Best

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Context: James is a member of the Humanities team, and participates in the ongoing research activities within the school. This research project was conducted drawing on the work of Tom Sherrington in relation to unsettling misconceptions. It has been recognized that in many subject areas, misconceptions can manifest themselves repeatedly. Research suggests that it is not sufficient to simply re-teach the 'correct' version. Rather the misconception itself needs to be unpicked, otherwise the faulty schema remains and will resurface.

Motivation: I had noticed that a number of Year 10 pupils often lost marks because a misconception has sustained despite re-teaching the knowledge.

Research Process: I focussed on a key concept, that of sustainability. I completed the following steps:

- I identified common misconceptions in relation to the term (e.g. it is just about the environment, it is expensive, it is all about recycling, technology is the answer…etc.)
- I made the misconception visible and explicit and explained why the misconception was incorrect.
- I then taught the correct conceptual model – the concept of sustainability being made up of the three 'branches' of environment, society and economy.
- The pupils then had opportunities to practice using the more informed understanding so as to reinforce this conception of sustainability.

Main Findings: The pre-test demonstrated misconceptions. Following the 'head-on' teaching, the pupils were able to apply the more informed conception more consistently and more securely. The use of clear command words helped.

New Learning: Taking the time to address a misconception 'head-on' had a positive impact on pupil outcomes, including performance in relation to exam style questions.

Next Steps: We plan to use this technique now in relation to other areas of the curriculum.

Sharing our learning: In summary the key learning that I wish to share is:

That the use of clear command words that relate to a topic is likely to reduce misconceptions in the first place. If misconceptions are identified, then unpicking them head on rather than simply re-teaching a topic can have a very positive impact
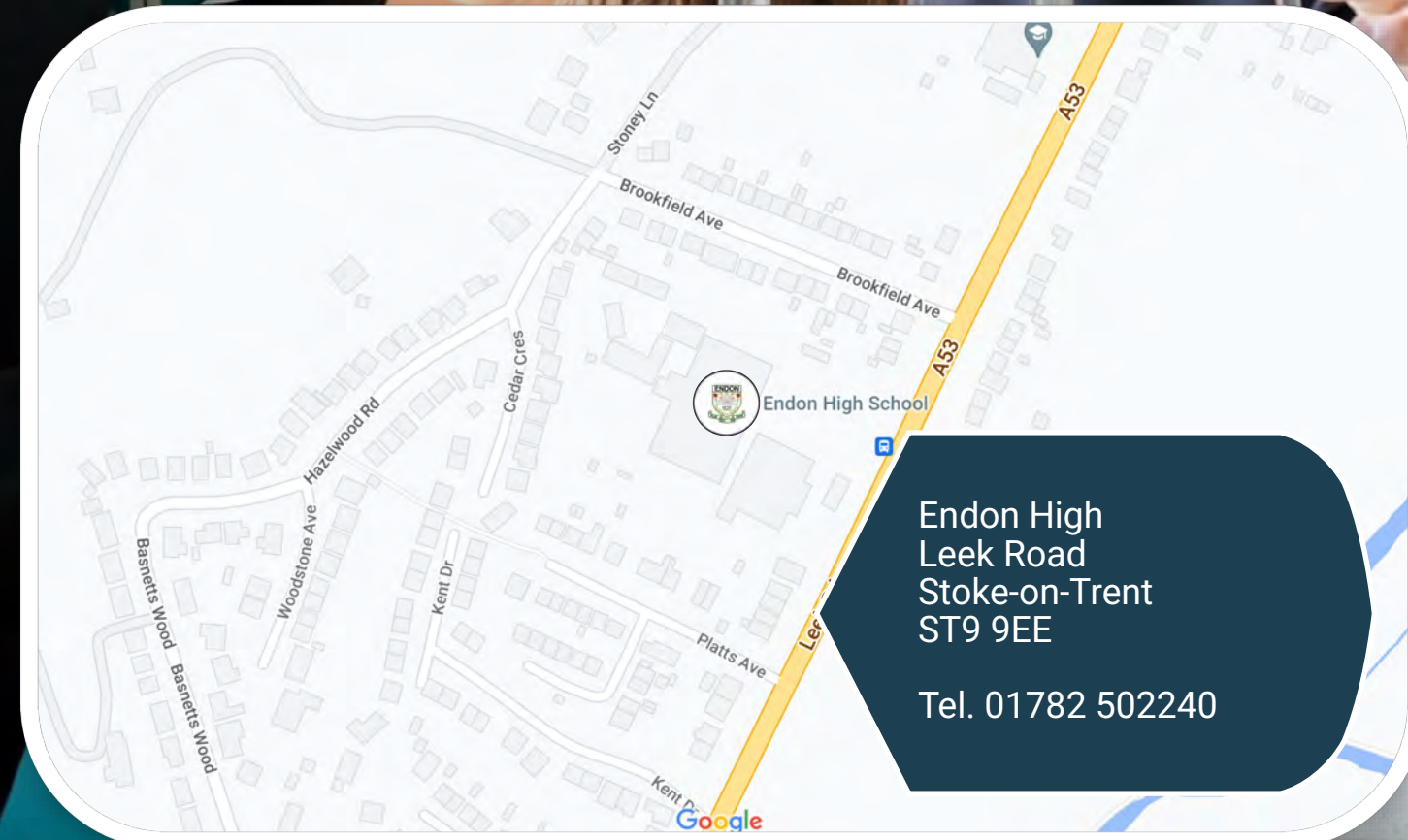
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CONCLUSIONS

We would like to thank all colleagues who participated in the project and we are very grateful to those schools and researchers who have also been happy to share their work via this brochure.

We selected the spiral of enquiry as it is grounded in over 25 years of research and has been successfully used in England, Canada and New Zealand in particular. Some key insights offered by others who have had success with the framework include:

- Don't under-estimate the power of curiosity – it can be more powerful than telling

- Keep going – the more that you use the spiral – the deeper and richer your professional understanding becomes, helping you to develop your adaptive expertise

- Shared language and common frameworks build coherence – the spiral of enquiry supports explicitness and intentionality.

- Sharing the spiral helps us to develop networks and share our expertise through supportive connections

- Keep it simple – be clear about the focus and good enough is enough.

- Recognise what you are going to let go of, to create the time and space to do more of what makes a difference for your learners.

- Working together in a spirit of appreciative enquiry builds professional trust and courage, the spiral of enquiry supports this ethos.

We hope that the research projects shared in this booklet have inspired you to draw on your curiosity and to engage in action research.

We are delighted that a number of colleagues have also had their work recognised through the Chartered College of Teaching. The College's Certificate of Evidence Informed Practice, https://chartered.college/certificate/. We congratulate them.

We are also grateful for the support of the Institute of Education in facilitating this work. In an ever evolving education system, teachers as researchers help pupils to benefit from evidence informed and evidence – challenged practices.

More about further opportunities with the IoE can be found at (link to CPD brochure)
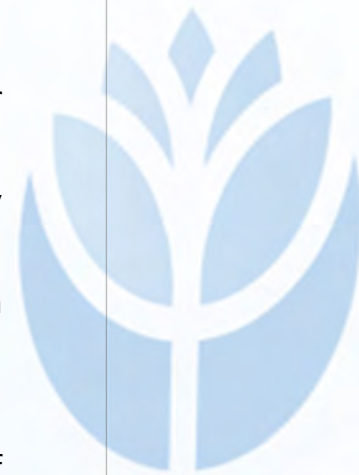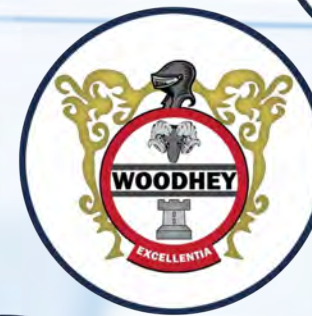
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