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What impact do interventions based on the VESPA mindset model have on GCSE maths resit students?

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Summary

Utilising the VESPA mindset model (Oakes & Griffin, 2016; Oakes & Griffin, 2017) an intervention of Scheme of Work (SoW) activities and one-to-one coaching sessions was implemented at Runshaw College, Lancashire, throughout the academic year 2020/21. Students were asked to complete an initial questionnaire, which identified target areas for mindset development and determined which activities would be included in the SoW and coaching sessions. A follow-up questionnaire, student interviews and teacher focus groups were also conducted. The COVID-19 pandemic did have an impact on both the original planned delivery and student sample. However, results demonstrate that the interventions had a positive influence on all aspects of student mindset as measured by the VESPA model; Vision, Effort, Systems, Practice and Attitude when questionnaire scores were compared to those of a control group.

Thanks go to our research team and Centres for Excellence in Maths partners at Nelson and Colne College Group, along with the whole GCSE maths resit teacher team at Runshaw College.

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Introduction

This research was carried out by two action research teachers at Runshaw College in Lancashire, North West England, supported by the CfEM Lead and Research Assistant. Runshaw College has a GCSE Maths resit cohort of approximately 450 students studying mainly vocational courses from entry level 3 to level 3. From September 2014, the government made changes to the conditions of funding for students studying a course of 150+ hours in the post 16 sector; these changes state that students must study maths and English as part of their study programme if they have not already obtained the satisfactory pass grade (currently grade 4). This change created a huge influx of students who were, in their eyes, made to study maths, and were not given a choice.

As teachers, we have found that the compulsory element of resit maths can fuel student's demotivation to work to their full potential in maths. It may also lead to their belief of its low importance. They have not chosen to study maths, it is just something extra to their vocational course, which they do not enjoy. The fact that pass rates are so low, with below 20% of resit students achieving a grade 4 or above from 2017-2019, thus finding themselves in a cycle of repeated resits, can also impact severely on their motivation. Pass rates improved in 2020 to 29.7%, but these were based on Centre Assessed Grades due to Covid-19. In 2021 students were awarded Teacher Assessed Grades, making it difficult to compare the results of these cohorts with previous years.

Through our research into Motivation and Engagement in the last academic year, we identified that whilst many students thought they had the ability to improve in maths, they didn't believe they would actually achieve better results. We recognised this as a mindset issue within the resit student cohort. Teacher experience shows us that some students are hardworking and dedicated in their vocational courses but don't feel the same about maths. As a research team we would like to develop students' mindsets to ensure they can employ a high level of effort and motivation in maths as well as their vocational courses, in an attempt to improve level 2 progression in resit students.

We invited Steve Oakes into college to lead a CPD session on his and Martin Griffiths' work on student mindset. Following this, we re-read their work on the subject, The A Level Mindset (2016) and The GCSE Mindset (2017), to support a pilot study (2019/20) and subsequently this year's work. Their VESPA mindset model focusses on developing 5 different aspects of students' mindset: Vision; Effort; Systems; Practice and Attitude. Students completed an initial questionnaire to identify any aspects that required development, before participating in targeted mindset activities within the GCSE Maths scheme of work. Some students also participated in one-to-one coaching sessions.

We conducted a small-scale pilot, from January to March 2020, to inform this piece of research and had a positive reaction from students. Although we did not manage to conduct the pilot from start to finish following the first national lockdown due to COVID-19, the reaction from both students and maths teachers towards the idea of maths mindset coaching was enough to fuel further planning of this research. It was

noted that most of the pilot students did not have particularly low scores on their initial VESPA questionnaire, with the exception of the Attitude measure, indicating issues such as anxiety around exams or a lack of resilience. It was clear to us in our preliminary exploration that students suffer with exam anxiety and find it hard to stay resilient for the year - both are things we can address with the VESPA model. Willingham (2009) states that anyone is able to learn maths, but some find it more difficult than others, and we must try and harness that can-do attitude to prove this statement true to learners.

Last year's action research found low levels of self-belief from students in their pre-questionnaires. We questioned over 200 students at this stage and they showed low levels of belief in their own maths ability and their capability to improve their grade. Additionally, last year's research found overwhelmingly negative teacher attitudes towards students' mindset in maths; often suggesting that they had little motivation and did not see the point. Working with students on their mindset, using the VESPA model, will allow the coaches to address issues of self-belief, self-confidence and motivation in maths.

Within the Runshaw College setting, pastoral support and work with the VESPA model has developed as part of college life over previous years. VESPA was the teaching and learning theme within the college for academic years 2016/17 and 2017/18 and is now a part of the pastoral curriculum in both A-Level and vocational studies. The college is dedicated to strategic aims which highlight the importance of implementing 'strategies to further improve behaviour and attitudes to learning' (Runshaw's Strategic Aims 7.1.1). As this model is familiar across the college, this piece of research is championed by the tutors and SLT teams, giving the project the support, it needs. We want to enhance the way of working that is already in place but drill down into maths-specific attitudes and motivations with students, to directly support progression of maths resit students.

This research links to the theme Motivation and Engagement, in particular key principle D - 'fostering a can-do attitude/growth mindset (by setting short term goals, monitoring progress, recognising success)'. Student attitudes are really important to us as a research team; we believe that a can-do attitude will have a positive impact on student progression. The sessions we plan to conduct with the VESPA tools support this project principle by directly addressing the need for resit students to foster a can-do attitude. 'Many students show a sharp decline in motivation and grades' during academic transitions such as moving to high school or college, and this is likely amplified for our students who have also experienced 'failing' at this subject prior to the transition. 'If students are going to invest their effort and energy in school, it is important that they first believe the effort will pay off... student's belief in their ability to learn and perform well in school - their self-efficacy - can predict their level of academic performance above and beyond their measured level of ability' (Dweck, Walton and Cohen; 2011).

Teacher experience tells us that a number of our students enter the resit system with negative experiences from school and it is the task of the FE tutor to try and undo the effects these have on students in class, and on their progression. This can be

difficult for teachers to address in class, when only seeing students once or twice a week. The coaching sessions will allow us to work with students on a one-to-one basis to try and break down negative past experiences and the influence of this on their current situation.

Our research aim for this work is to help GCSE Maths resit students identified as having a low score in one or more elements of the VEPSA model, develop a growth mindset, or improve aspects of their current mindset to support their progression in the maths classroom.

Literature Review

COVID and Our Setting

The global pandemic of 2020 will be felt in our learners' lives for years to come. Many students have lost months of learning, and evidence shows that lockdowns disproportionately affected those in state schools compared with fee paying (Cullinane and Montacute, 2020). In the academic year 2020-21, we are faced with a cohort of students who have lost learning; and trends show that GCSE maths resit students are more likely to be from disadvantaged backgrounds (Ireland, 2019).

As FE practitioners we must try to fill the gaps in learning and counteract skill lost as a result of the pandemic. A report from the Sutton Trust suggests that, in the long-term, the lockdown will have a negative impact on our students' earning potential in the future, and this is even more prevalent in those from less well-off backgrounds (Halterbeck, 2020). With this in mind, we must find new ways to ensure our learners entering FE in the year 2020-21 have a well-rounded support system at college to help reduce the effects of the pandemic on their future. This is a huge challenge across all FE institutions in Britain.

GCSE Maths Landscape

Jo Ireland (2019) conducted a review of the literature across the resit landscape, and summarises some very real concerns and challenges felt on a daily basis when trying to teach, support and motivate this cohort of students. There is evidence from Ireland (2019) that there are disproportionately more students from disadvantaged backgrounds in a resit cohort. This poses issues with attendance and support from home, which can manifest in disorganised and disengaged learners. The review also states that there is a wealth of evidence that making maths and English resits mandatory results in a deep-rooted dislike of the subject, and a lack of motivation to attend and learn. If a student decides before entering the classroom that they don't want to be there, we, as teachers, face a huge challenge when trying to motivate them to partake in learning.

Pleasance (2020) argues that the policy change to mandatory retakes is not working due to the continuous nationally low levels of achievement. He argues that to try and improve we need 'high teacher expectations' and to encourage a growth mindset (Pleasance, 2020, p117). Investing in our students and setting high expectations of them is something we all try to do as teachers. However, we only see them for a limited amount of time in the classroom. We need to use the CfEM project to consider ways to firstly, invest in learners both in and out of the classroom, and also try to break down the barrier of mindset that both Pleasance and Ireland allude to.

It is important to note that mandatory retaking of maths can have a negative impact on student motivation, and it can also instil a feeling of failure in the learners. However, often 'for many pupils, academic challenges are related more to a lack of organisation than to a lack of intellectual ability.' (Hassanbeigi et al. 2011: p3). Students enter FE with a variety of experiences, and sometimes a series of unfortunate events has resulted in a learner retaking their maths GCSE. This is often showcased as a refusal to engage with lessons. However, it is important as teachers to recognise when Hassanbeigi's point above is at play and show the learner that

they are capable. We need to consider rethinking their systems and strategies to learning.

Mindset

As GCSE maths resit teachers, we find that students' mindset and attitude toward resitting their maths qualification are often the biggest barriers to learning. 'Motivation is one of the most important psychological concepts in education' (Hassanbeigi et al. 2011, p. 3). Often learners' fixed attitude towards their inability to achieve their maths GCSE 'prevents them from seeking help and exerting…effort' (Hwang *et al.*, 2019, p. 263). Research suggests that when students have a fixed mindset, they often attribute any experience of low scoring, or poor marks in assessment, to their lack of ability. Learners struggle to contemplate that their lack of effort may contribute to the situation; this way of thinking can hinder their ability to rebound from anything they view as a failure (Hwang, *et al.*, 2019). In their two-year study, Hwang *et al.* (2019) discuss the effect of a fixed mindset succinctly, suggesting a fixed mindset predicts lower gains in academic achievement for low-achieving students than their high-achieving counterparts. Lower achieving students with a fixed mindset are far more likely to exhibit a decline in mathematics achievement.

Mindset Intervention

A study into the mindsets of 492 thirteen and fourteen-year-olds in the pre-vocational track of Dutch education looked at their beliefs about learning and intelligence, and the consequences of these. Over half of the students believed intelligence to be fixed. Learners did not study for subjects which they felt they were not good at; they believed trying harder wouldn't help. They 'did not pay attention during class or invest any effort in their homework' (de Kraker-Pauw et al. 2020, p12). In this study, de Kraker-Pauw et al. (2020) suggest that a student's mindset can be influenced by intervention. What needs to be examined is whether there are specific intervention techniques that work for GCSE resit students; they may be different to secondary school or those used with A-level students.

Action research led by Nora Holder at City of Westminster College, and Vernon Eskander from Lambeth College (ETF and AfA, no date), in the academic year 2018/19, studied the impact of mindset activities in an FE setting. Project staff found that mindset activities with students in a one-to-one setting resulted in a marked improvement on attendance and attitude towards maths. 'All participating staff, when surveyed, agreed that the projects were successful in raising the profile of the central importance of English and maths in their vocational area' (ETF and AfA, no date, page 8). They do however state that starting the intervention in the Spring term was a challenge and maybe the data would have yielded more if intervention was undertaken over a longer period. When investigating a change in mindset, we should consider how the length of the intervention and types of activity used impact on its effectiveness.

Polirstok (2017) conducted a review of the literature around the academic performance of secondary school students from the perspectives of grit and mindset.

She believes that it is important for teachers to be able to adopt strategies to encourage students to take risks academically to improve their performance. When students accomplish goals and foster success, they can be successful as learners and dramatically change their future prospects. A set of strategies needs to be tried and tested with resit students to develop a toolkit for FE teachers to use with this level and type of learner.

Another benefit of implementing a mindset intervention model is showcased in Howard's (2020) review of the literature. They found that 'Individual differences in beliefs about academic ability, personal drives for academic behaviour and coping mechanisms can mediate the experience of test anxiety' (Howard, 2020, p5). We know that exam anxiety is an increasing issue for many post-16 GCSE students and there is evidence that an improved mindset could help to alleviate this.

It is clear from the literature that a lot of investigation has taken place regarding secondary education, and a wealth of investigation demonstrates that even a one-time mindset intervention can produce a positive impact on students and their learning outcomes (Smith and Capuzzi, 2019). However, in the specific area of GCSE resit there is very little evidence. This piece of research needs to contribute in some way towards discovering which interventions can help to support resit learners with their often fixed mindset and help to improve progression and success for this cohort.

VESPA Model

Over the course of eight years, Oakes and Griffin researched what they term the seven crucial constructs of non-cognitive skills. They identify these as: meta-cognition, growth mindset, resilience, grit, conscientiousness, self-control and self-efficacy (Oakes and Griffin, 2017). They found there was no conclusive agreement on how best to help young people develop these skills, and so came up with their own five-part model called the VESPA Model. They suggest that successful learners score highly in five characteristics:

> **V**ision- they know what they want to achieve
> **E**ffort- they work hard and conduct many hours of proactive independent study
> **S**ystems- they organise their learning resources and their time
> **P**ractice- they use deliberate practice and develop their skills
> **A**ttitude- They have a growth mindset and respond constructively to setbacks
>
> (Oakes and Griffin, 2017, p15)

In their books The GCSE Mindset (2017) and The A-Level Mindset (2016), Oakes and Griffin exemplify 80 activities aimed at developing these five attributes of a successful learner. The activities can be used to develop one or more characteristics depending on how a student scores in an initial questionnaire assessing their

baseline. As a research team we are interested in whether we can impact resit students fixed mindset by utilising an individualised set of these activities.

In Polirstok's (2017) review of the literature she describes a range of strategies to strengthen and develop mindset. The strategy she categorises as 'self-evaluation' is closest to the VESPA model intervention. She suggests that 'adolescents can be taught by teachers to monitor specific academic or social behaviours that detract from academic performance' (Polirstok, 2017, p5). This feeds into the Systems strand of the VESPA model. If we can encourage our resit students to identify the systems that support learning, and those that hinder their academic performance, maybe we can develop more successful ways of working for them. Students who learn to evaluate these behaviours, and compare their evaluation with a teacher's 'can help to maintain pro-academic and pro-social behaviours over time' (Polirstok, 2017, p7). We propose to use the VESPA model in one-to-one coaching sessions, giving students the time to evaluate their scores on each VESPA characteristic, but also discuss and compare these with what their coach sees, and possibly their teacher. We will also write some resources into the GCSE maths Scheme of Work to ensure all students participate in whole group activities within the course.

There is a wealth of literature that cites the positive impact that the VESPA model has had on student mindset and also achievement. Jerrim, Shure and Wyness (2020) found that by improving both the Vision and Effort characteristics, academic achievement was positively impacted, with students achieving 'around 0.37 standard deviation above their peers, even controlling for prior academic attainment' (Jerim, Shure and Wyness, 2020, abstract).

Further support for the link to achievement is cited by Oakes and Griffin (2019) on their website where they state that their research has found a link between effort and achievement. As FE practitioners our goal here is to improve students' scores on one or more characteristics in the VESPA model with the hope of impacting our resit learners fixed mindsets. However, the education sector is a results-driven sector, and knowing that there could be an improvement in attainment will encourage buy in from key stakeholders in senior leadership to support the research. For example, the Central South Consortium (2020), a 6th Form College in Wales states that 'Implementing the VESPA system has helped us keep improving and our sixth form results now rank in the top 5% of UK Alps schools and colleges.' This is a bonus for all invested in a learner's future. If this shift in mindset can also impact attainment, then we can further add to the literature around improving the GCSE resit landscape.

The VESPA model utilises a self-report questionnaire, whereby students answer a set of questions, and intervention is then designed with these answers in mind. 'How a pupil rates their effort will quite often depend on their own frame of reference.' (Duckworth and Yeager, 2015, p7). Students can often have a very different view of their work ethic compared to their teachers; however, self-report and teacher-report questionnaires are a commonly used measure and often accurate. Duckworth and Yeager (2015) report that questionnaires are less affected by differences in administration or ambient distraction and so are the most suitable tool we have to measure the students' mindset. Using pre and post questionnaires where the

students self-report in both cases will also help to minimise the effects of reference bias as individuals will be measured against themselves and their own interpretation of the questions.

The beauty of the VESPA model, as a choice of intervention, is that it breaks the concept of a successful learner down into tangible parts so students can see what they need to work on. Whereas growth mindset is primarily concerned with believing hard work will improve attainment, the VESPA mindset model covers 5 different areas: Vision; Effort; Systems; Practice and Attitude. Given our historic experience with GCSE resit students we believe that providing students with skills in the areas they are lacking could have a greater effect than a focus on a 'you can't do it … yet', which is supported in the research from Hassanbeigi and colleagues (2011).

Our Study

Following a review of the literature in the area of mindset intervention, this study proposes to investigate the following question:

What impact do interventions based on the VESPA Mindset model have on GCSE maths resit students?

The design of the research process will be guided by the following objectives:

1. Can one-to-one sessions with a maths teacher impact on a student's mindset?
2. When students participate in one-to-one coaching sessions, does it impact on their maths teacher's perception of the student?
3. What is the impact on the student-teacher relationship in the classroom following different interventions?
4. How do student behaviours and attitudes change in the classroom following different interventions?
5. What contributes to a mindset not changing?
6. Do the mindset interventions have an impact on student behaviours and attitudes beyond the maths classroom?

Methodology

What are we measuring?

As a research team, we wanted to explore the impact of the VESPA model on students' mindset, looking particularly at their scores for each of the VESPA characteristics: Vision, Effort, Systems, Practice and Attitude. We posed the following question:

What impact do interventions based on the VESPA mindset model have on GCSE maths resit students?

This question can be broken into three key parts – the VESPA Model, GCSE maths resit students, and mindset intervention. Therefore, these three key areas formed the basis of data collection tool discussion and design.

The Research Process

All students studying resit GCSE maths in the academic year 2020/21 were invited to take the initial VESPA questionnaire. This produced a personalised set of scores for three hundred and eight students out of a cohort of approximately four hundred and fifty. Uptake was hindered by technical issues involving the college Wi-Fi and the functionality of the online VESPA platform, also leading to a delay to the start of the intervention period. The results of the questionnaire provided a starting point relating to all five VESPA characteristics for all GCSE resit students. The research then took on two pathways:

Element 1 – Scheme of Work Activities

Due to the extensive research and success of the VESPA model tools we wanted to implement them into the resit GCSE maths Scheme of Work (SOW) to ensure all students experienced the benefit of these tools. Action research teachers viewed all activities in both of Oakes and Griffin's books, The GCSE Mindset (2017) and The A-Level Mindset (2016). Using the cohort VESPA questionnaire analysis as a guide, eight tools were selected that were appropriate for delivery within the SOW, of which all class teachers were required to deliver at least five.

The tools chosen were:

- VESPA Reflection
- Practice Questionnaire
- What's Stopping You?
- The 3 Hows of Independent Study
- Finding Flow
- The Bottom Left
- Will vs Skill
- 25 Minute Sprints

Following the Christmas break the country re-entered a nation-wide lockdown which had implications for the activities selected. Our action research teachers reviewed the tools and made some changes to ensure activities could be conducted online. Therefore, the list above is the final selection of tools following the move to remote learning.

We reviewed the initial VESPA Questionnaire scores from the students in order to ensure that appropriate and useful tools were selected from the 80 activities in Oakes and Griffin's books (2017, 2016). To assess the impact of their implementation, we conducted a reflective focus group with teachers at the end of the data collection phase.

Element 2 – Coaching Sessions

Two action research teachers acted as coaches to conduct one-to-one coaching sessions with students identified as having a lower VESPA profile. We planned to review all initial VESPA questionnaires and target a sample group from the GCSE maths resit cohort. However, again, the nationwide lockdown affected our plans for the recruitment of coaching session participants. Following our previous experience of engagement with remote learning, we felt that students who decided to access the sessions themselves would be more likely to engage, rather than those advised to. A video was created advertising the sessions, which was shown to all GCSE classes [*appendix 1*] and 6 students were recruited. Each student's VESPA report [*appendix 2*] was used as an initial guide as to which aspects of their VESPA profile should be targeted first, and which activities were most appropriate for each student.

Data Collection Design

Data collection encompassed many elements as detailed in *image one*.

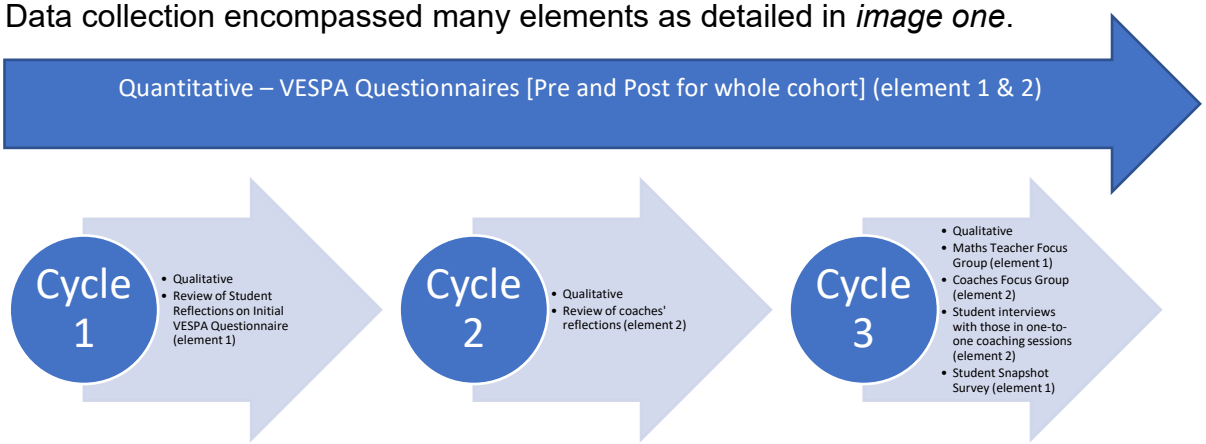

Image One: Flow Chart depicting data collection strategy and cycles

Quantitative

It is clear from the wealth of research conducted using the VESPA model that the questionnaires allow a clear view of a student's profile in relation to the five characteristics (Oakes and Griffin, 2019). We decided to use this questionnaire as a quantitative measure for a number of reasons:

- There is a wealth of evidential support
- The questionnaire is pre-prepared and measures exactly what we were investigating
- The VESPA academy offers a portal to support the research process.

The VESPA Academy portal helped our coaches decide which tools and activities to use as a starting point with individual students in one-to-one sessions. By using this, we also had the opportunity to contribute to an international body of research.

Students completed the VESPA Questionnaire at the beginning of the course and again at the end. In between, all teachers integrated at least six activities into their teaching, and selected students participated in a minimum of 4 coaching sessions. The questionnaire consists of 28 statements that students mark from 'Strongly Agree' to 'Strongly Disagree'. This then generates a score from 1 (low) to 10 (high) for each characteristic, as well as an overall score, also out of 10. 3Three hundred and eight students completed the initial questionnaire and of these 93 also completed the second. Unfortunately, the timing of the assessments and an unexpected week of enforced home-learning due to an outbreak of the Delta-variant in college meant that we were unable to gather as many responses to the second questionnaire. We excluded four students who had attempted the questionnaire more than twice. Of the 89 students who completed the VESPA Questionnaire at both the beginning and end of the research period, 75 students accessed VESPA activities within the SOW, either online or in person (the main cohort). The remaining fourteen students were part of a control group who did not participate in VESPA activities either through the scheme of work or one-to-one coaching.

Qualitative

Qualitative data collection was broken down into five parts:

- Coaches' reflective diaries, which were continuously updated throughout the implementation phase.
- Students' reflections on their initial VESPA Report
- Maths teachers' focus group to gauge the effect of the SoW activities.
- Coaches focus group and one-to-one student interviews to assess the impact of the coaching sessions.
- A student snapshot survey to find out which of the activities students' remembered and preferred.

We decided to ask our two coaches to complete a reflective diary throughout the process. This practice encourages continuous consideration of what is planned, what has happened, and what impact a process is having; therefore, encouraging unceasing improvement (Mathew, Mathew & Preechattu, 2017).

We chose to conduct a focus group with the maths teachers using SOW activities as it provides a safe environment to discuss ideas and feelings. Both focus groups and interviews provide us with rich qualitative data, however, knowing our colleagues we decided to conduct a focus group due to the nurturing environment it creates (Krueger & Casey, 2015). There is a similar rationale for conducting a focus group with the one-to-one coaches.

Due to the small number of one-to-one students, we decided to have an in-depth discussion in interview form with each student who consented.

Students were asked to complete a reflection on the accuracy of their VESPA report as one of the in-class activities. This provided much qualitative data for analysis, which we were also able to quantify based on students answering positively or negatively. The execution of this was also hindered by Wi-Fi issues, meaning we received 115 responses out of 308.

The student snapshot survey was a late addition to our data collection tools. After conducting the SOW Teacher Focus Group, it was noted that it had been difficult to judge student engagement with the VESPA activities due to so much of the year being conducted online. Teachers were unsure of the lasting impact of the activities on students, so the survey was designed to discover how many activities students could recall completing, if any, and which they had preferred and why. This was conducted on Google forms to provide students with anonymity and emailed to the entire cohort. Teachers were also asked to remind students to complete it in class. Perhaps due to the late timing of the survey, midway through the GCSE assessments, we received a smaller than hoped for response from 36 students.

Analysis Process

Quantitative comparisons:

Our main Quantitative research tool was the VESPA Questionnaire, which converted students' responses into scores out of 10 for each aspect of the VESPA model. We were able to compare the average scores for the cohort before and after the intervention had taken place, as well as looking more closely at individual scores. We also compared the modal scores from the first and second round of questionnaires using bar charts.

We were able to quantify the data in two of our other qualitative tools: The Reflections on the VESPA Questionnaire and the Student Snapshot Survey. Here we could record the number of occurrences of certain words such as 'accurate' and 'confidence' as well as the number of positive vs negative responses.

Thematic Analysis of Qualitative Data:

We conducted all focus groups and interviews with an interviewer and a note-taker present. The interviewer wrote an initial reflection, and the note-taker reviewed the recording to ensure their notes were accurate and completed an initial analysis. The interviewer and the note-taker then reviewed the data together to perform a secondary analysis using the sub-questions to help identify themes.

We then reviewed and discussed all the data as an Action Research team to triangulate it and give a holistic view. Our discussion was based on the themes that had arisen from each interview or focus group so we could then compare and contrast all the evidence to find the strongest apparent themes. This meeting allowed us to assess the strength of the data in relation to each of the themes.

Ethics and Bias

Learners and participants were asked for their permission to share their responses before each data collection tool was used and all responses were anonymised before being included in the report.

Each member of the Action Research team worked in each of the different research roles (interviewer, note-taker, reviewer). This helped ensure that the interviewer was not biased by other interviews that they had conducted. When one-to-one students were interviewed, their related coach was not present so as to avoid prejudicing the student's responses. When comparing the VESPA questionnaire results, we only included responses from students who had completed the questionnaire twice- at the beginning and end of the research period. We excluded any results where it was unclear when they had been submitted.

The ethical implications of the use of a control group needed to be considered. It is necessary to 'minimize the effects of designs that advantage or are perceived to advantage one group of participants over others' (BERA, 2011, p.7) such as excluding a control or comparison group from participating in a desirable intervention. With this in mind, we considered if the control group could be disadvantaged by not receiving the mindset activities. We were confident that the current model for the GCSE resit course was successful and were unsure if engaging in the mindset activities would have any effect on student attainment. We therefore felt that the use of a control group to measure the effectiveness of the intervention was necessary to the research project, and unlikely to have significant adverse effects on the attainment of the control group.

Results

Findings from the VESPA Questionnaire

The average scores for the students who completed both cycles of the VESPA questionnaire are shown in the table below.

	Main Cohort (75 students)						Control Group (14 students)					
	V	E	S	P	A	Overall	V	E	S	P	A	Overall
Pre	5.6	5.6	5.7	5.1	4.6	5.3	6.6	6.4	6.6	4.8	5.3	5.9
Post	5	5.8	6	4.8	5.4	5.4	4.9	5.1	5.9	4.2	5.7	5.3
Difference	-0.6	+0.2	+0.3	-0.3	+0.8	+0.1	-1.7	-1.3	-0.7	-0.6	+0.4	-0.6

An increase can be seen in Effort, Systems, Attitude and Overall scores for the main cohort. Only one measure, Attitude, has increased in the control group, with significant decreases in the other aspects.

Between the pre and post questionnaires being completed by students, changes were made to both the VESPA portal and the questionnaire. Ten of the 28 questions were changed, including the following questions relating to Practice:

Original Question	Replacement Question
I compare model answers against my own work	I test myself on important topics until I remember them
I hand in extra exam work for marking	When revising I mix different topics/subjects in one study session
If I don't understand classwork I talk to my teacher	I like hearing feedback about how I can improve
I use mind-maps/diagrams for revision	When preparing for a test/exam I teach someone else the material

The decrease in Practice scores could be attributed to this rather than a decrease in this aspect of the students' mindset, but it is impossible to know for sure.

Research suggests that Covid has had a negative impact on students' mental health and wellbeing (BMJ, 2021). It is therefore encouraging to see an increase in Attitude scores. This attitude change is further evidenced in the Snapshot survey taken at the end of the course. Despite more than half of the thirty-six respondents (53%) claiming that Covid and lockdown had had a negative impact on their mindset, twenty-two students reported that their mindset had improved in the Maths classroom 'a lot', with thirteen saying 'maybe a little' and only one student saying 'no'. One student in the snapshot survey reported feeling 'more comfortable to answer questions and not feel embarrassed' in the maths classroom, and suggested they felt 'more relaxed and organised when it comes to deadlines' as a result of the VESPA mindset intervention. This is just one example of how student mindsets have improved, which is reflected in the wider cohort questionnaire analysis.

For most of the sections on the VESPA questionnaire, the modal scores of the main cohort are very similar to the mean scores. However, this is not the case for

Attitude (F*igure 1*) The modal score increased significantly from 1 in the pre-questionnaire to 6 in the post.

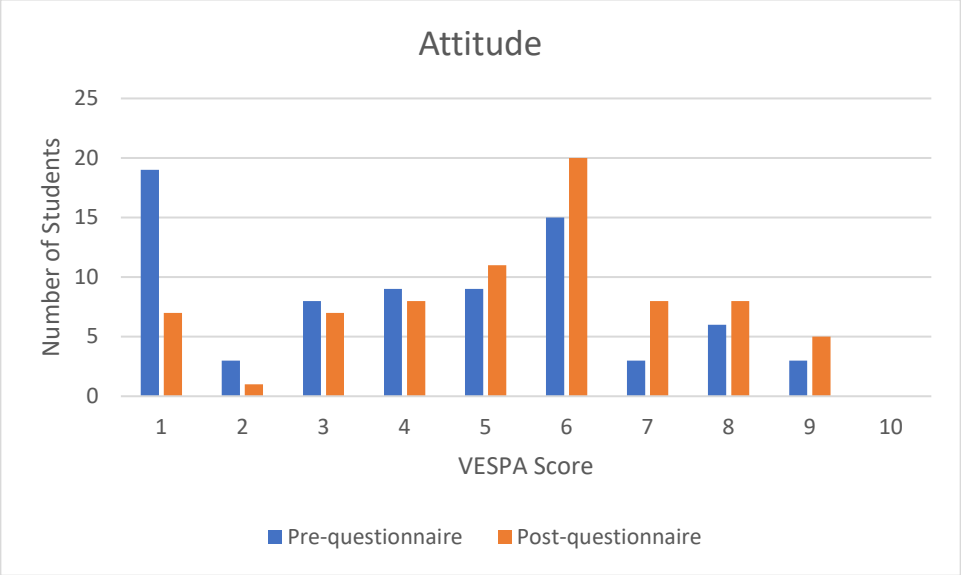

Figure 1: Graph to show the model score for Attitude in the pre and post-questionnaires for 75 learners.

Of the 89 students who completed both VESPA Questionnaires, four stood out as having drastically improved scores between the first and the second cycles. Their teachers were asked to reflect on any changes they had noticed in these students. Due to the amount of time spent learning online, this was difficult to judge, but one teacher felt that the VESPA activities delivered in lessons had had an impact on their student. They described how the student had gone from being 'shy and not really speaking to an active member of the class' (Teacher C, June 2021), becoming more confident to ask questions in class and seek out extra support. The teachers of the other students felt that either there hadn't been a noticeable change within the maths classroom or that the change could be attributed to factors other than the VESPA tools, such as making decisions regarding their plans for next year (Teacher A, May 2021).

After students completed the initial VESPA Questionnaire, the research team asked them to write a reflection on their report. One hundred and eight responses were collected and of these, ninety-two students thought their report was accurate.

> I think my vespa report is accurate. I think it describes me well, and I've never really realised most of the things mentioned. I was surprised to see what I'm like written down.
>
> (Reflections on VESPA Report, December 2020)

Student opinions on the VESPA questionnaire were split: in the Snapshot survey it was ranked as the favourite activity by eight out of thirty-six students (Snapshot Student Survey, May 2021), whilst another eight identified it as their least favourite. Students who liked it were pleased to see that it identified areas for improvement. Those who didn't were uncomfortable with the personal nature of the questions.

They may not have been aware that teachers were unable to see their responses to the individual questions, only their final score for each section, thus feeling exposed and vulnerable to criticism. Resit students often begin the course feeling like failures and so having their weaknesses highlighted in a report could feel uncomfortable for some.

Impact of the VESPA activities over time: Immediate gratification vs Long-term effects

Teachers have noticed some change in student attitudes this year.

> I would say that I've definitely seen a difference in attitude this year, … certainly this year, my students are more motivated to revise... but it could be the change in the way we're assessing this year.
>
> (SOW Teacher Focus Group; Participant C, March 2021)

It is difficult to determine whether this change in attitude is down to the VESPA activities or adjustments made to usual assessment methods due to Covid. One of the chosen tools focussed on revision techniques. In the SOW teacher focus group, Participant A described how students have never really been taught how to revise, and when shown the vast array of revision techniques available they were shocked by how few they were aware of. However, it was unclear whether this had a lasting impact on the students (SOW Teacher Focus Group, March 2021). This was reinforced by a one-to-one student having no recollection of this particular activity in a coaching session a few weeks later (Coaches' Reflections; Coach A, 2021).

Three teachers commented that whilst students were engaged in class, they couldn't always remember the activities later (SOW Teacher Focus Group, March 2021). Evidence from the student snapshot survey showed that eight out of thirty-six students did not recall doing any of the in-class activities. It was suggested that the time frame between activities may have been a contributing factor to this and that incorporating them into the scheme of work more frequently could have more impact. One teacher said they had completed two activities just two weeks apart in class and '[the students] seemed to be linking things between them … it did feel like something had sunk in from last time' (SOW Teacher Focus Group; Participant B, March 2021).

Although teachers questioned the long-term impact of some of the tools, the fact that 'What's Stopping You?', which was completed early in lockdown, was so popular in the snapshot survey, which was carried out months after that activity took place in class, suggests that this one at least had some lasting effects.

This lack of long-term impact following initial enthusiasm for activities was also identified in the one-to-one coaching sessions. Coaches described feeling that there was a positive reaction from the student during the session, but sometimes the student forgot about it as soon as the session was over. For example, Coach A talks about one task that was focussed on planning for an assessment. They spent time with the student putting all the topics on post-it notes, organising them and identifying priorities. The student commented on how useful this had been at the

time, but in a session two weeks later, they took the activity out of their folder, and it was clear that they hadn't looked at it since or used it to prepare for the assessment. (Coaches Focus Group, May 2021). However, a longer-term impact of the sessions was identified by a student who noted that the one-to-one sessions had given them the confidence to be able to speak up. This then meant they were getting feedback in class, that reinforced the positive impact to encourage them to continue to speak up in class (Student 1 Interview, April 2021), so an immediate impact can be translated into a longer term one in some instances.

The impact of Covid on the delivery of the model.

New Ways of Working

Covid restrictions and the move to online learning following the January 2021 lockdown meant that several of the planned tools had to be adapted to new ways of working. It was recognised that this could have been detrimental to their delivery.

> A lot of these activities hand themselves really well to small group discussion, and you could have had post-it notes flying around the room... but at the minute we are so restricted as to what they can share and how close they can get, it's hindered it.
>
> (SOW Teacher Focus Group; Participant C, March 2021)

However, teachers found innovative ways to adapt the VESPA tools in order to maintain student engagement and collaboration. One teacher used Google Forms to collect student responses. They were surprised at how well the students engaged with this format, commenting 'part of me thinks if I asked them to put pen to paper, I probably wouldn't have got as much out of them as I did on Forms'. (SOW Teacher Focus Group; Participant C, March 2021). Another described how they used a collaborative whiteboard for students to anonymously share their answers to an activity. This provoked discussion and interaction between students that the teacher felt would not have occurred had they delivered the activity face-to-face as planned (SOW Teacher Focus Group; Participant D, March 2021).

The lockdown also led to a reassessment of the tools used within the Scheme of Work. As it was unclear if exams would go ahead, a focus on revision techniques (Systems and Practice) seemed unlikely to engage students learning from home. Experience from the previous lockdown suggested that many students would struggle with motivation during this time, so the original activities were replaced with more focus on resilience and routine (Attitude and Systems). The 'Chunking Steps' activity was replaced with 'What's Stopping You?' during the first weeks of lockdown as it focussed on overcoming obstacles and it was felt that it could have an immediate impact on the situation that had the potential to demotivate and disengage students. This activity was identified as a favourite in the snapshot survey, with one student saying this was because it had taught them 'new ways at approaching different struggles/obstacles in life' (Student Snapshot Survey, May 2021). Although this tool would not have been used had it not been for the impact of Covid, teachers also felt it was very successful and would incorporate it into the scheme in future (SOW Teacher Focus Group, March 2021).

This is a positive effect of the unprecedented circumstances that the team have faced during their research period. The plans were to initially conduct the activities in a face-to-face setting, yet, when this was taken away from them, teachers developed new and innovative ways to conduct them - these initiatives, arguably, would not have happened if they were not teaching online.

It is important to note that teaching online wasn't always viewed as a positive, and it was sometimes difficult to judge engagement with activities delivered online. Participant A discussed an instance where they had asked students to send their responses only if they felt comfortable, as the content of the activity was quite personal. Only one student out of five classes sent in a response. This made it very difficult to judge how well the others had participated, whereas in a face-to-face setting it would have at least been possible to see if they were completing the activity, if not the actual content of the responses (SOW Teacher Focus Group, March 2021).

Sample Size

The smaller than anticipated number of one-to-one students meant that the coaches did not conduct as many sessions as originally planned. This presented them with more opportunity to reflect on their skills and improve their practice (Coaches Reflections; Coach A, 2021). However, the coaches did feel that a larger sample size would have given them experience with more students and helped to improve their skillset and confidence in delivery (Coaches Focus Group, May 2021). It was suggested that another positive of having fewer students meant they were able to have more regular sessions, leading to stronger relationships (Coaches Focus Group; Coach B, May 2021). It is important to consider the caseload of each coach, ensuring it is sufficient to give experience, but not so large that there is little time to reflect or build relationships.

Due to the size of the sample, it is difficult to determine whether any of the mindset changes can be attributed specifically to the one-to-one coaching sessions. There are lots of factors to consider such as the individual student, the coach, the relationship, the motivations of the student and their vocational course. Nevertheless, both students interviewed did believe that taking part in the sessions had contributed to the changes they perceived in their own mindsets (Student 1 Interview, April 2021 and Student 2 Interview, May 2021), suggesting that they are at least an influential factor.

Confidence

Confidence was a common theme from several sources. Students recognised it in themselves with thirty-four students out of one hundred and eight referring to having low confidence or feeling maths anxiety in their reflections. Of these, twenty identified it as the factor they would most like to change or improve (Reflections on the VESPA Questionnaire).

For students who attended all their one-to-one coaching sessions, there was strong anecdotal evidence of a positive impact on their confidence levels. Coach A talked about a student in their maths class who had taken part in the one-to-one coaching programme and noticeably changed. They described the student as being very overwhelmed and anxious in maths lessons and 'looking like they was going to cry a

lot of the time' at the beginning of the year, but noticed they became much more proactive in asking questions and requesting support after working with a coach (Coaches Focus Group; Coach A, May 2021). The student also recognised this change in themself:

> I do struggle with maths quite a lot and I used to never try in maths because I just didn't think I could do it but now I've started trying I've started realising that if I actually put my mind to it then I can actually do it, so it's helped me in that way.
>
> (Student 2 Interview, May 2021)

Student 1 had a similar reflection, describing feeling more confident asking for help in maths and having improved self-belief (Student 1 Interview, April 2021). Notably, this student's Attitude score improved from 6 in the pre-questionnaire, to 9 in the post.

In addition, both students interviewed also discussed the impact of the coaching sessions in their wider lives as exemplified by student 2's experience in Police Cadets: 'I struggle with going and speaking round there... I'll say that I can't do it. So, I've changed so I can do it and I've started doing presentations and stuff and stepping up instead of letting someone else do it.' (Student 2 Interview, May 2021). Their supervisors also commented on this change in their confidence levels (Student 2 Interview, May 2021).

The closest measure of confidence in the VESPA questionnaire is Attitude. The mean and modal Attitude score increased for the cohort, suggesting that the activities delivered in the Scheme of Work had an impact on confidence levels. An increase in confidence was a common theme identified within the Snapshot survey responses, with students referring to this both in and outside of their maths lessons. It is important to note though that Attitude scores also increased for the control group, implying that there may be other external factors also influencing this score.

Coaches: Training and Relationships

It was evident from the coaches focus group that the relationship between coach and student is different to that between teacher and student. Coach B had coached one of their own students and hadn't noticed much difference in the relationship, but Coach A felt quite strongly that they would not want to coach students from their own classes. Student 2 agreed with this in their interview: 'I think it's better personally to have a different person because I felt better having someone else' (Student 2 Interview, May 2021). They did say that they had previously been mentored by a peer at Cadets and would be open to being mentored by another student, but 'it should definitely not be your own maths teacher' (Student 2 Interview, May 2021).

In both the coaches focus group and coaches' reflections, nerves and apprehension were mentioned when beginning to deliver the sessions. Coach A mentioned feeling overwhelmed by the number of tools there were to choose from, and worried about choosing 'the wrong one'. However, she noted that the students engaged with all the activities selected during the sessions (Coaches Focus Group, May 2021).

Coaches need to be prepared to take on the task, as it is very different from the role of teacher. Teachers taking on the role may benefit from CPD in order to differentiate between the skillsets required for teaching and coaching. Coaches should not underestimate the skills and requirements of the coaching role, and they need to be better equipped and trained to take on these positions in the future.

Discussion

Attitude was the only aspect of the VESPA profile that increased for all students, regardless of whether they engaged with the VESPA activities. This contrasted with evidence that lockdown and Covid have generally had a negative impact on students' mental health (BMJ, 2021), as well as students' responses to the snapshot survey, where more than half felt that their mindset had been impacted negatively by lockdown and Covid. We believe reasons for this could include the difference in maths delivery from high school to college, them maturing as an individual, and other aspects of college life increasing confidence or security. Students indicated that they felt more confident and in control in maths, despite having less motivation and feeling stressed outside of the maths classroom. In the VESPA questionnaire, the modal score for students' attitude increased from 1 to 6 out of a possible 10 so there is still room for improvement. Higher levels of confidence combined with a motivated mindset can only have a positive impact on progression.

Resit students can have a reputation of not caring, not being bothered about their studies or refusing to engage with lessons (Hassanbeigi et al. 2011). Similarly, our previous year's research highlighted teachers' negative views of their students' mindset in maths and their belief that students didn't see the point of studying it. The literature suggests that these behaviours can be a manifestation of a fear of repeated failure in a subject they are being forced to resit (Ireland, 2019). Hwang, Reyes and Eccles (2019, p. 263) claimed that students' fixed mindset, which is suggested by the low Attitude scores on the VESPA questionnaire, 'prevents them from seeking help and exerting…effort'. In contrast to this, a strong theme emerging from students' reflections on their VESPA report was a desire to improve their attitude scores, particularly their difficulty 'bouncing back' following a setback, which was highlighted in their reports. This was supported by evidence from the coaches focus group.

Although students have a desire to improve, they don't always know how to go about this. They may be lacking in confidence due to their previous experiences of maths. Fear of failure and maths anxiety are very real barriers to success for maths resit students. One of the VESPA activities, 'The Practice Questionnaire', highlighted students' lack of knowledge of revision and practice strategies; another barrier to them improving academically. It is not enough for teachers to tell students to revise and expect them to know how to go about this. Rather we need to teach them specific strategies and techniques that will be effective. In the words of Oakes and Griffin (2017, p. 228) 'these qualities don't magically appear, however fervently we might hope or expect them to'. Student reflections also highlighted a lack of organisational skills, supported by interviews with one-to-one students, which Hassenbeigi et al. (2011) identify as one of the biggest causes of academic challenges. Our evidence suggests that the VESPA model can support the development of these skills, and thus a student's mindset.

Vision activities were not incorporated into the Scheme of Work during the year as this aspect had one of the higher average scores. We felt it was the characteristic least likely to affect students' maths results and would also be developed by progress in their wider vocational area. However, the average score in this aspect

decreased the most. This was common to both the main cohort and the control group, suggesting that Covid contributed to this decline. A study by BMJ (2021) found that the disruptions in education due to Covid have left young people facing an uncertain future, which is likely to have had an impact on these Vision scores. Opportunities for work experience and apprenticeships have been limited. If students find that they don't enjoy their vocational course as much as they thought they would, their vision for the future can become less clear. Having to study large portions of usually practical courses online could have impacted this further this year. This will be addressed by including Vision related VESPA activities next year, to encourage students to keep revisiting their vision and keep them motivated throughout the year. As mentioned above, motivation is a key factor in students' progress as it plays into effort and attendance. It has been difficult to track if the mindset sessions have had an impact on attendance this year due to the proliferation of online lessons and the change to the method of assessments, however, it is something we would like to track in future cycles.

During the January 2021 lockdown, teachers were forced to adapt the delivery of some VESPA tools to the online environment, and in some cases were surprised that the use of online tools such as Microsoft Forms and collaborative whiteboard promoted significant engagement and participation from students. Some activities discuss personal attributes, which some students do not feel comfortable talking about in front of their peers. However, being able to post them anonymously on an online platform then gave the opportunity for these to be discussed without anyone needing to know who had written what, which would have been more difficult in the physical classroom using mini whiteboards or post it notes as originally planned. Continuing to use some of these online tools as part of face-to-face teaching could help students feel safer in sharing and discussing issues of a more personal nature, thus helping to further develop their mindset. The more students can be encouraged to engage with the activities the more likely they are to have a positive impact.

A recurring theme was that some of the tasks failed to leave a lasting impression on students. Although teachers recognised them as being well-received during lessons, they were unsure how many students were actually putting the skills learnt into practice, or if they even remembered them a few weeks later. This was corroborated in the student snapshot survey where a quarter of respondents did not recall participating in any of the activities. If students can't remember engaging in the tasks it could be argued that there is no point in taking the time to do them, but it is clear from the evidence that when they have had an impact on students it has been positive. Repetition of topics and spaced practice is one of the most effective methods of increasing knowledge retention (Kang, 2016) and we need to recreate this in the VESPA activities to ensure they have staying power in our students' minds. Students themselves can recognise how useful having strategies for revision and organisation are but if they are not reminded of them regularly, they will fail to put them into practice. This is evident from the experiences of the one-to-one coaching students. A student was noted as having appreciated a task aimed at revision during the session but then forgot about it and didn't use it again until the coach spotted it in their folder two weeks later (Coaches Focus Group, May 2021). However, another student struggled with time management and was advised by their

coach to enter all tasks onto the Outlook calendar. The student said this made them feel less stressed and more in control but the coach would refer to it in each weekly session; asking if they were using it and how they were finding it, thus engraining the habit (Coaches' Reflections, Coach B, April 2021). By having more activities spaced closer together teachers can replicate this in the SOW activities which will make them more relevant and useful to students and aid the development of their mindset and fuel progression.

When interviewed, both students who took part in the one-to-one coaching sessions said they would like to continue with these sessions next year. Although this is a positive demonstration of the relationships built between students and coaches, Student 1 said they would continue only if it was with the same coach, which could indicate a certain level of dependence. The goal of the one-to-one sessions is to encourage students to employ the strategies learnt from the activities independently. If students become too reliant on their coach for guidance, this could negate the experience for them when the sessions come to an end. However, both students also spoke of a willingness to become coaches themselves for their peers. This could be a means of not only helping the students to prepare for the end of the coaching cycle by thinking about how they would pass their new-found skills on, but also broadening the reach of the project. Teaching others is a recognised effective revision technique and is included as a VESPA activity; 'It's Time to Teach' (Oakes and Griffin, 2017). This could be a path to independence for these students whilst also consolidating their knowledge and securing their confidence in using the strategies learned.

Further Reflection Following Results

As GCSE examinations were cancelled in June 2021, students were awarded a Teacher Assessed Grade (TAG). At Runshaw, students sat 5 assessments to inform the TAGs, and were given advance notice of the content of each paper. Students reacted positively to the process, with many commenting that they felt more relaxed and confident going into each assessment. Given the differences with a normal year, it is not possible to make comparisons between the outcomes of this cohort and previous years. However, it is possible to compare the results of the students who did participate in the VESPA interventions with those that did not.

Group	Main cohort	Control group
Number of students	285	67
Percentage of students who improved their grade	59.6%	47.8%
Average grade improvement	0.58	0.21

Of the VESPA cohort, consisting of 285 students who completed the course, 59.6% improved upon their previous best GCSE maths grade, with an average grade improvement of 0.58. In the control group, consisting of 67 students, 47.8% improved their grade, with an average grade improvement of 0.21. This suggests that the skills learned by participating in the VESPA activities did have some impact on student outcomes. Those relating to organisation, revision, positive attitude and motivation would have been particularly beneficial during this process.

There was one notable difference between the students in the main cohort and the control group in that the control group teacher taught them virtually from home for a period of 4 weeks during November 2020. Although the curriculum and lessons delivered remained the same for both groups, it is impossible to say to what extent this difference also impacted on the achievement of these students. However, we strongly believe that the VESPA activities did play a significant part in this. Previous years' results show that the classes taught by the control group teacher have always performed in line with or above the average for the whole cohort. For these reasons, we will be proceeding with the VESPA scheme of work and interventions for the entire GCSE resit cohort going forward.

Conclusions

The VESPA activities had a positive impact on students' mindset however they could be tweaked to make them more engaging for students and to improve the retention of the skills and strategies learned. Improved confidence and organisation were commonly referred to by students and if this can be coupled with higher levels of motivation and effective revision techniques it should lead to increased student progression. Although Covid and lockdown had some negative effects on the research such as lower levels of student recruitment to the one-to-one sessions and engagement with the data collection process, within the project teachers were able to innovate and found positive outcomes, such as the increased engagement with online tools, which can also be utilised in future.

Strong relationships between coaches and one-to-one students are important but must not result in students becoming overly reliant on the coaches. Coaching requires a different skillset to teaching and this must be invested in for students to receive appropriate sessions which lead to them being able to replicate the skills and strategies learned independently not only when they are instructed to do so. A coaching programme training peer mentors is a possible stratagem to enable students to gain this independence and be forward-thinking whilst also ensuring the sustainability of the model when the project comes to an end.

Recommendations

We will carry out further iterations of this intervention in the next academic year. In order to improve the recruitment of students, it will be necessary to complete the initial VESPA questionnaire as early as possible in the autumn term. This will give opportunity for analysis and selection of students for one-to-one coaching before the October half term break. In future we would like to target the students who teachers feel would benefit the most from the coaching intervention as well as taking volunteers for the programme. The longer time frame will allow us to offer more students the opportunity to access the one-to-one coaching, with the option of fortnightly sessions. It will also allow us to conduct the research in cycles, enabling us to review the impact and make any necessary adjustments after the first cycle.

The teachers who acted as coaches this year will continue with this role next year, with the recruitment of a further teacher from within the department. If teachers are to take on the role of coach, it is very important that they recognise the role is different to and separate from teaching. This year's coaches learned this as the research progressed and recommend that anyone else taking on the role undertakes training and reading to ensure they are prepared for this. With this in mind, they will train and mentor new members of the coaching team next year. It is crucial that coaches have adequate time to plan and prepare sessions, and to reflect on their practice in order to perform the role to the best of their ability. Steps also need to be taken to prepare the students for an end point in their coaching journey, where they will be capable of taking the techniques they have learned and applying them independently.

VESPA activities will continue to be incorporated within the GCSE maths scheme of work These will be more carefully selected to complement, for example, preparation for mock exams and assessments. To promote retention, the number of activities will be increased from 5 to 8, with a maximum of three weeks between activities, and links to previous strategies will be made explicit to students where appropriate. Online tools such as Microsoft Forms and collaborative whiteboard will continue to be used in the face-to-face delivery of the activities to encourage students to participate and contribute.

It is also important to consider any other outside influences which could have an impact on a student's mindset. We would like to investigate this further next year, with the aim of highlighting any positive influences to all students and maximising their overall benefits. We noticed differences in responses from this research project to what we found last year, particularly regarding students having a fixed mindset and teachers believing that resit students had low levels of motivation to improve. By modifying our questions in data collection we can discover if this is due to a shift in mindset caused by the VESPA activities, external influences or if it just reflects a change in the way we framed the questions for this project compared to the last one.

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Appendices

Appendix 1 - Sample VESPA report

Each student receives a report tailored to their individual VESPA scores. Every student with the same score for a particular aspect receives the same supporting statement.

VISION SCORE - YOU KNOW WHAT YOU WANT TO ACHIEVE AND WHY

1	2	**3**	4	5	6	7	8	9	10

At the moment you may be the type of person who finds thinking about the future challenging. You might have very little idea what you'd like to do when you leave education and you are probably undecided about university, employment or other options. It's unlikely that you set yourself goals and when you do you often find that you don't stick to them. You may feel you're not in control of your life, and have yet to work out what path you will follow. Are you yet clear on what you don't want your life to be like?

Key Questions: Are you yet clear on what you don't want your life to be like? Could you arrange a conversation with your tutor to explore some options?
Suggested VISION Tools: Twenty Questions, Getting Dreams Done, Perfect Day

EFFORT SCORE - YOU PUT IN THE REQUIRED HOURS OF INDEPENDENT WORK

1	2	3	4	5	**6**	7	8	9	10

You are a reasonably hard-working student, but you know that you could be working harder. You generally use your study periods effectively and complete tasks to a good level. On occasion, you may cut corners or rush tasks. You work hard in most classes, but perhaps you could be more actively involved in class.How could you improve your effort habit?

Key Questions: Do you think you are working hard enough? Who do you sit next to in classes? Do they work the same way as you?
Suggested EFFORT Tools:1-10 Scale, Inner storytelling, The 3 R's of Habit

SYSTEMS SCORE - YOU ARE ORGANISED

1	2	3	4	5	6	**7**	8	9	10

You are likely to use most of your study periods effectively, organising your time well. You meet many of your deadlines, only missing when work piles up. Your files and folders are normally well organised though there may be a few gaps. Your notes are generally very clear, organised and helpful and you can revise effectively from them. Do you use a diary or planner to break down tasks and record deadlines – and could you use it more effectively?

Key Questions: When was the last time you missed a homework deadline? Describe your work space? How do you record your tasks?
Suggested SYSTEMS Tools: The Energy Line, STQR, 2-4-8 Rule

PRACTICE SCORE - YOU USE A VARIETY OF REVISION TECHNIQUES

1	2	3	4	**5**	6	7	8	9	10

Your practice score indicates you are able to revise using familiar techniques. Often your revision is passive and you may feel bored. You don't revise in the most efficient way; you may study the topics you're already familiar with and rarely push yourself to revise things that you are not sure of. You avoid high-stakes practice under timed conditions. How can you make sure your revision or practice is more targeted?

Key Questions: Key Questions: What could encourage you to push yourself outside your comfort zone more? How do you plan your revision time?
Suggested PRACTICE Tools: The Revision Questionnaire, Learn from Mistakes, The Leitner Box

ATTITUDE SCORE - YOU BOUNCE BACK FROM SETBACKS

1	2	3	**4**	5	6	7	8	9	10

You may feel nervous before assessments or exams. Normally you'll feel confident in your abilities although you could be setback by a disappointing result. You generally believe that you can improve your intelligence through hard work but struggle in lessons can sometimes make you feel as if others are better than you at a subject. When you face a setback, you can pick yourself up and carry on, but two or three disappointments in a week can make you feel as if you should give up entirely.You may need to practice reconnecting with your previous successes.

Key Questions: What assessment are you most proud of in the last 3 months?When something goes wrong-what do you do?
Suggested ATTITUDE Tools: Falling Forwards, The Change Curve, The Vampire Test

OVERALL VESPA SCORE

1	2	3	4	**5**	6	7	8	9	10

Your current VESPA score indicates you are strong in some areas required for success but have some areas for development. For example, you may be independent and capable of revising, however may lack confidence and the ability to push yourself outside your comfort zone. You may be revising the same topics and feeling frustrated that your grades aren't improving. Don't worry though, it is possible to develop your mindset! Which areas could you improve in most? And which have priority in the coming weeks and months?