

What impact do classroom interventions and 1-to-1 coaching sessions based on the VESPA Mindset and GROW models have on GCSE resit students?

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About CfEM

Centres for Excellence in Maths (CfEM) is a five-year national improvement programme aimed at delivering sustained improvements in maths outcomes for 16–19-year-olds, up to Level 2, in post-16 settings.

Funded by the Department for Education and delivered by the Education and Training Foundation, the programme is exploring what works for teachers and students, embedding related CPD and good practice, and building networks of maths professionals in colleges.

Summary

Improving the mindset of GCSE maths resit students has been a focus for our CfEM research since the beginning of the project. In the academic year 2021/22, post Covid-19 disruption, students returned to a more normal academic year, where they would sit external examinations often for the first time. We predicted that students would require more support than ever with aspects of their mindset such as organisation, revision and confidence.

Throughout this academic year, a mindset intervention based on the VESPA mindset model (Oakes and Griffin 2016; Oakes and Griffin 2017) was implemented at Runshaw College and Blackpool and The Fylde College in Lancashire. In an extension of last year's study, VESPA activities were incorporated into the GCSE maths scheme of work, and also used within 1-to-1 coaching sessions based on the GROW model (Whitmore, 2009).

Students completed an initial VESPA questionnaire to identify areas for development from Vision, Effort, Systems, Practice and Attitude (Oakes and Griffin 2016; Oakes and Griffin 2017) and determine which activities would be used. After the intervention, students completed a follow up questionnaire to measure changes in mindset. Focus groups were also conducted with teachers, coaches and coachees.

Results demonstrate that there is potential for these interventions to have a positive influence on student mindset, particularly for those students participating both in class and in 1-to-1 coaching, as measured by the VESPA model. Recommendations are made for enhancing this impact in the future.

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Background

Introduction

This research was carried out by a team of three action research teachers at Runshaw College, a CfEM in Lancashire, Northwest England. Runshaw College has a GCSE Maths resit cohort of approximately 300 students studying mainly vocational courses from entry level 3 to level 3. Aspects of the intervention were also carried out by one teacher at Blackpool and The Fylde College, a network partner college also in Northwest England.

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). Less than 20% of resit students achieved a grade 4 or above under the new GCSE maths specification from 2017-2019. Pass rates have since improved to 39.5% in 2020 and 42.3% in 2021, but these are based on Centre Assessed Grades (2020) and Teacher Assessed Grades (2021) after exams were cancelled due to Covid-19. Thus it is difficult to compare these with previous years' results.

Still, more than half of students failed to achieve a grade 4 or above in 2021. Many resit students find themselves trapped in a cycle of repeated resits and this can impact severely on their motivation and confidence.

The legacy of the pandemic still reigns, as 2022 is the first year in which most GCSE resit students have had the opportunity to sit an external examination. As teachers, we anticipated that this might lead to students experiencing more anxiety around formal exams than usual. As they hadn't had to prepare themselves for such exams, we also expected that students' revision skills and time management would be weaker than in previous years.

Oakes and Griffin's (2016) VESPA Mindset model identifies 5 different aspects of mindset: Vision, Effort, Systems, Practice and Attitude. Their works *The A Level Mindset* (2016) and *The GCSE Mindset* (2017) focus on supporting teachers and students to understand the impact these characteristics can have on their achievement, and each book contains 40 different activities each aiming to develop a particular aspect of VESPA. A questionnaire is also provided to measure each characteristic with a score out of 10 and identify areas for development. Students completed this questionnaire at the beginning of the research, before participating in VESPA activities within the GCSE Maths scheme of work. Some students also participated in 1-to-1 coaching sessions using a combination of VESPA activities and the GROW model (Whitmore, 2009).

Motivation and engagement has been the focus of our action research throughout the CfEM project, and this study is a direct continuation of last year's work. The VESPA model has previously been part of college life, particularly in the pastoral curriculum, for the previous 5 years at Runshaw College. VESPA was the teaching and learning theme for the years 2016/17 and 2017/18 and remains part of the pastoral curriculum for both A level and vocational students. Last year's study (Griffiths and Wilson, 2021) saw GCSE resit students participate in an in-class intervention with 5 VESPA activities incorporated into the GCSE maths scheme of work and a small number of students also participating in 1-to-1 coaching. There was a positive impact on both the mindset and achievement of the cohort in comparison with a control group of students who did not participate in the activities. This prompted us to continue the study this year, with the intention of increasing the number of

activities within the scheme of work to 8, and also increasing the number of students participating in 1-to-1 coaching.

The aim for this research is to use the VESPA Mindset model to encourage GCSE Maths resit students to improve aspects of their current mindset and support their progression in the maths classroom.

Literature Review

Resit Students' Mindset

There are continuous low levels of achievement for GCSE resits nationally, suggesting that the policy of mandatory resits is not working (Pleasance, 2020). The fact that the vast majority of learners on a resit course would never have chosen to continue their mathematics studies had resits not been mandatory leads to one of the biggest challenges in teaching this cohort of students: motivating them (NCETM, 2016). This is compounded by the fact that learners are, in some instances, retaking GCSE maths 3 or more times, which can instil a feeling of failure in learners, having a further negative impact on their motivation.

Charlie Stripp, director of the National Centre for Excellence in the Teaching of Mathematics (NCETM), believes that one of the biggest barriers students need to overcome in order to improve their mathematical ability is 'the insidious cultural fixed mindset that 'you're either good at maths or you're not'' (NCETM, 2014). Students believe that the reason they have not been successful in maths is predetermined and out of their control, rather than something they can change. This is indicative of a fixed mindset. Saunders (2014, abstract) suggests that students with a fixed mindset can become 'trapped in a recursive pattern of low achievement, low motivation and low effort'. A fixed mindset has been found to prevent students from seeking support or exerting effort in their studies (Hwang, et al., 2019). In our own experience, these are typical traits of many GCSE resit students. Students with a fixed mindset often attribute their failures to a lack of ability rather than effort and feel they lack any control over the situation. This can prevent them from rebounding from anything they view as a failure (Hwang, et al., 2019), thus trapping them in this cycle.

Stripp believes that a growth mindset, combined with a mastery approach, can enable significantly more students to be successful with school level mathematics (NCETM, 2014). As mastery techniques are already embedded within the teaching of our GCSE resit course, it seems natural to use this project to focus on mindset and encourage more of our GCSE resit students to believe that they can be successful in mathematics.

Impact of COVID-19 on students' mindsets

According to the United Nations, the COVID-19 pandemic of 2020 has been the largest disruption to education in history (United Nations, 2020). At the time of writing, the pandemic is ongoing, and its impact will be felt by students across the world for many years to come. During the academic year 2019/20, it was estimated that high school students lost up to 15 weeks of learning due to lockdown (The DELVE Initiative, 2020), and this was most keenly felt by low-attaining students, the students most likely to be on a GCSE resit course. Engagement rates with online learning in one school were found to be as low as 30% in the bottom set, compared to 90% for the top set (Hodgen, et al., 2020) suggesting that lower attaining students have become more disengaged with learning than ever during lockdown. Heads of maths in two secondary schools reported that they were more likely to set revision work for lower ability students to do during online lessons, rather than delivering new learning (Hodgen, et al., 2020) indicating that even if students did engage with remote learning, they could still have huge gaps in their knowledge due to new content not being delivered.

The learning loss during the second wave of school closures beginning in January 2021 is believed to be smaller, due to schools becoming more proficient at delivering online learning

than they were in March 2020, and a larger proportion of students able to access lessons remotely (Nelson, et al., 2021). However, students joining a GCSE resit course this year have been through both lockdowns whilst studying for their GCSEs and the second lockdown is likely to have further compounded their loss of learning. The impact of this has been somewhat masked by the use of unadjusted Teacher and Centre Assessed Grades (TAGs and CAGs) (Clark, 2021), which has seen students being awarded grades based only on the content they have been taught rather than the content of the full GCSE course. Indeed, Clark (2021) suggests that 'the abilities of children have nosedived due to the interruptions in education', whilst on paper, TAGs and CAGs suggest that standards have improved dramatically. On a resit course typically delivered as a revision course, this could cause huge issues, particularly with students coming to college from multiple previous institutions and having different gaps in their knowledge. It is likely that there will be an impact on students' confidence and motivation as a result of this. This project aims to investigate whether mindset interventions can counteract this for our GCSE resit students.

Mindset Interventions

Paunesku et. al. (2014) carried out a study on the efficacy of mindset interventions on underperforming students in US high schools, with a focus on growth mindset and self-efficacy. The interventions consisted of just two 45-minute online sessions, but they were shown to significantly increase the academic performance of a large group of students over the course of a semester. The biggest impact on performance was in maths, where the percentage of at-risk students successfully completing the course rose by more than 10% over the course of the intervention. This shows that mindset intervention can improve performance in maths, and that a limited number of sessions can still have an impact.

In our initial study (Griffiths & Wilson, 2021) we found that the delivery of shorter, more frequent sessions also appeared to have an impact on academic performance. The main cohort of 285 GCSE resit students regularly participated in mindset activities based around the VESPA model (see below) during their maths lessons. These students performed significantly better in end of year assessments compared to a control group of 67 students who did not participate. The percentage of students who improved upon their previous best grade in GCSE mathematics over the course of the year was 12% higher for the main cohort, 59.6% compared with 47.8%, and their average grade improvement was more than double that of the control group, at 0.58 grades, compared to 0.21 (Griffiths & Wilson, 2021). In the next iterations of this intervention we will further investigate the impact of the interventions on achievement.

Oakes and Griffin have a combined experience of over 40 years working with post-16 students. They were interested in identifying reasons why some students excelled in post-16 education, far surpassing expectations based around their prior attainment, whilst others appeared to hit a ceiling and were unable to achieve the targets set for them (Oakes & Griffin, 2016). After extensive research and interviews with both types of student, they identified that often non-cognitive skills impact on student performance rather than academic ability. They identify these as: meta-cognition, growth mindset, resilience, grit, conscientiousness, self-control and self-efficacy (Oakes & Griffin, 2017). They could find no conclusive model to support young people in developing these skills and so came up with

their own, called the VESPA model. They suggest that successful students demonstrate high levels of

Vision- they know what they want to achieve

Effort- they work hard and conduct many hours of proactive independent study

Systems- they organise their learning resources and their time

Practice- they use deliberate practice and develop their skills

Attitude- They have a growth mindset and respond constructively to setbacks

(Oakes & Griffin, 2017, p. 15)

Their VESPA mindset model provides a toolkit of activities aimed specifically at developing these characteristics. Students complete an initial VESPA questionnaire, which provides them with a score for each characteristic, and suggests activities from the toolkit that will best support the development of their mindset. We are interested in using a set of VESPA activities to support resit students in developing their fixed mindset to believe they can be successful.

Whilst reviewing the literature for our previous study (Griffiths & Wilson, 2021) we found a wealth of evidence on the positive impact of VESPA interventions on both mindset and achievement (eg. Central South Consortium, 2020). Our own study also contributed to this with results as highlighted above. This study aims to further contribute to this evidence by taking into account the recommendations of this study (Griffiths & Wilson, 2021) and assessing the impact on a second cohort of GCSE resit students.

Exam anxiety is an issue faced by many students, and several studies have found this to be on the increase due to COVID-19 (eg. Rakhmanov et.al, 2020). Common causes of exam anxiety include fear of failure and a poor history of testing (Cherry, 2021), both of which are likely to have been experienced by resit students in the past. Mindset interventions have been shown to help students to deal with this issue (Howard, 2020) and the VESPA Mindset package (Oakes and Griffin, 2016&2017) contains many tools to support students with common strategies used to overcome anxiety such as banishing negative thoughts and being prepared and organised for examinations.

Mindset and coaching

As part of our initial study (Griffiths & Wilson, 2021) our research team carried out 1-to-1 coaching sessions with a small number of students, mainly using the VESPA model. We found there had been a marked positive impact on their mindset and self-belief, not only regarding GCSE maths, but also in their wider lives. This has motivated us to further investigate the impact of such interventions on a larger scale.

Different coaching models have been used successfully for many years in fields such as sport and business, and a wealth of literature is available on successful models of coaching. The role of the coach is explicit throughout; they are not there to solve the problems of the coachee, rather to empower and support them to come up with their own solutions (Kimsey-House, et al., 2018). The coachee is expected to take an equal and active role, making the coaching process collaborative (Kimsey-House, et al., 2018). It is important to make

expectations of both coach and coachee from the outset of the process (Kimsey-House, et al., 2018), and Abdulla (2018) recommends the use of a coaching contract for this purpose.

Limited research exists on the impact of coaching in educational settings (Oakes & Griffin, 2016), with much of the literature focusing on university students (Abdulla, 2018). However, Abdulla (2018) believes that coaching can be effective with students of all ages if they understand and engage with the process. He suggests that coaching is appropriate for any situation where a student has a practical challenge to deal with, a specific task they want to accomplish, or a particular skill they want to develop. With this in mind, it is important to consider how we will recruit the right students for the programme, and initially we will advertise and ask them to sign up voluntarily as recommended by Abdulla (2018).

It is important to note that coaching and teaching are very different roles; training and practice are required to develop skills in coaching, and not all teachers will feel confident coaching in 1-to-1 situations (Oakes & Griffin, 2017). In our initial study (Griffiths & Wilson, 2021), two GCSE maths teachers took on the role of coaching GCSE resit students and were surprised at how different this role felt to their usual teaching role. They reported feeling quite nervous when planning and delivering sessions at the beginning of the intervention. The work of Abdulla (2018), Kimsey-House et. al. (2018) and Oakes and Griffin (2016, 2017) will be very influential in the preparation and training of the coaching team for this study.

Models of Coaching

GROW

One of the most commonly used coaching models is the GROW model (Whitmore, 2009). Each letter represents a different phase in the coaching process:

Goal
Reality
Options
Will

Abdulla (2018) describes the model in their coaching handbook: Once a coachee's ultimate goal has been set during the first coaching session, each subsequent session should then consist of setting a proximal goal- a short term goal to be achieved by next session. The reality of the current situation- where the coachee is at in relation to this goal is discussed, followed by the evaluation of the options available to achieve this goal. Finally, will relates to the construction of an action plan as to how this will be achieved. Abdulla (2018) recommends the use of this model to provide a structure when coaching students and also suggests it as suitable for anyone who is new to coaching, making it an ideal starting point for our coaching team. Grant (2011) reiterates that the model supports the coach and coachee in staying focussed during the coaching session, ensuring the conversation remains purposeful, concentrating on the goal.

The VESPA Model

Oakes and Griffin began to use coaching strategies with post-16 students when they came to the realisation that simply 'having a word' did not lead to long term improvements in attitude and performance (Oakes & Griffin, 2016, p. 123). They initially used the GROW model, and experienced some real success, but found that a downfall of this model was that it provided limited guidance for students to be able to generate solutions to their own

problems (Oakes & Griffin, 2016). They decided that more tools were required to support a change in behaviour and thus began to develop their A level Mindset approach- coaching students by exploring and assessing their performance under the five VESPA headings: Vision, Effort, Systems, Practice and Attitude.

Kimsey-House et. al. (2018) emphasise the importance of recognising the uniqueness of every coachee and understanding that they will have goals, abilities and interests that are unique to them (Kimsey-House, et al., 2018). The variety of VESPA tools available enables bespoke sessions to be created, tailored to the individual needs of each coachee, rather than a one-size-fits-all programme. The coachee's VESPA report further supports this by highlighting tools specific to the VESPA scores of the student. Oakes and Griffin (2017) recommend that these tools do not form the sole focus of a session, but that they can be used to provide a structure for the student, supporting their progress towards their goal.

In our experience, we believe that the use of the GROW model to provide structure to coaching sessions, combined with the use of VESPA tools to guide discussion if a student is unclear about their goal or how to plan to reach it, could have the biggest impact on GCSE resit students.

Our Study

Following a review of the literature surrounding mindset and coaching interventions, this study proposes to investigate the following question:

What impact do classroom interventions and 1-to-1 coaching sessions based on the VESPA Mindset and GROW models have on GCSE resit students?

What impact does mindset intervention have on students' attitude towards maths?

How does the impact of the activities compare between the classroom and 1-to-1 settings?

What is the wider impact of mindset intervention?

What are the barriers to students engaging with mindset activities/coaching?

Methods

This study takes a mixed methods approach, collecting both qualitative and quantitative data. Quantitative data collection is better suited to larger samples and will enable us to analyse the impact of the intervention on the whole population. Qualitative data will provide richer detail of participants' perceptions and experiences. Together this will provide a holistic picture.

At the beginning of the research period, all GCSE maths resit students were given the opportunity to take an initial VESPA questionnaire (Oakes and Griffin, 2017). A total of 234 students completed this questionnaire and received a personalised mindset report [appendix 1] as a result, including an overall VESPA score. VESPA scores are measured out of a maximum of 10. This data was used as a benchmark to measure any changes in mindset.

The research then took on two strands, each with two iterative research cycles.

Strand 1- Scheme of Work activities.

The cohort VESPA questionnaire results were used as a guide by the action research teachers to select activities from the choice of 80 offered in Oakes and Griffin's works *The A-Level Mindset* (2016) and *The GCSE Mindset* (2017). Eight activities were incorporated into the GCSE resit scheme of work, approximately two per half term. These were chosen to address the characteristics that the cohort had scored lower in, and also as they appeared to be suited to delivery to a whole class. Although the cohort attitude score was one of the lowest, the action research team felt that these activities were quite personal and were better suited to delivery either one to one or with a smaller group of students. The tools chosen were:

1. VESPA Reflection
2. Practice Questionnaire (Practice)
3. Mission and Medal (Effort)
4. 3 types of Attention (Systems)
5. Building Independent Learning (Practice)
6. What's Stopping You? (Vision)
7. 3 Hows of Independent Learning (Effort)
8. The Bottom Left (Systems)

An alternative version of each of these activities was created on <https://teacher.desmos.com/>, which is used to deliver most GCSE maths lessons in the setting. This enabled classroom teachers to choose the method of delivery that would best fit into their lesson.

The first cycle of the research consisted of planning the activities into the scheme of work and delivering the first three of these. At the end of this cycle, a meeting was held between the 8 teachers involved in the delivery of the in-class intervention to gather feedback and to note any suggested changes going forward into cycle 2. This meeting was observed by a member of the action research team, so that a clear record of the discussion was available.

During cycle 2, the remainder of the in-class activities were delivered, and at the end of this cycle, students retook the VESPA questionnaire, providing quantitative data into the impact of the activities. A total of 94 students completed both the before and after questionnaire, and thus form the sample for analysis. To gather qualitative data, a reflective focus group was carried out with 7 teachers who had been involved in the delivery of the activities. The aim of this focus group was to provide a safe environment in which to discuss ideas and

feelings and gather data on teachers' insights into the intervention. We also conducted a student survey to gather data on students' opinions of the activities they had participated in in class and any impact they perceived this had had on their mindset. This survey received 30 responses.

One teacher at Blackpool and The Fylde College also delivered this strand of the research to their students. 17 students form the sample for analysis here, having completed the VESPA questionnaire at the beginning and end of the intervention period. 11 of these students also completed the student survey.

Strand 2: Coaching Sessions

Three action research teachers, who are also maths teachers, acted as coaches, conducting 1-to-1 coaching sessions with GCSE maths resit students. One of the teachers had some previous coaching experience, but much of the coaching training was self-learned from the literature. Coaches met regularly to plan and kept reflective diaries throughout the research period to continuously assess the impact of the coaching sessions and identify any areas for improvement.

Coaches designed sessions based around the GROW model (Whitmore, 2009) and supported by VESPA activities (Oakes and Griffin, 2016&2017), which were carefully selected by the coaches to support the goals of the coachees. A coaching contract [appendix 3], initial coaching session proforma [appendix 4] and a weekly coaching proforma [appendix 5] were developed for coaches and coachees to keep a record of their sessions. These proformas also helped to ensure some consistency across sessions delivered by all three coaches. It was decided that students would not be coached by their own maths teacher to give the coaching process some separation from GCSE maths lessons and encourage goal setting with a non-maths focus.

In their initial coaching session, coachees set an ultimate goal- what they wanted to achieve by the end of the coaching period, and a smaller goal to work on for the next session which would support their progress towards their ultimate goal. In each subsequent session progress was reviewed, barriers discussed and successes celebrated, and a new smaller goal was set. The coaching period was not a specified length of time, students agreed to initially attend 6 sessions, either weekly or fortnightly, and then review their progress to determine if they should continue and for how long.

Abdulla (2018) suggests that coaching sessions have the biggest impact when coachees self-refer for support. So initially in November, the coaching sessions were advertised to all full-year GCSE resit students through a recruitment video and they were encouraged to sign up. Unfortunately, only two students requested an initial coaching session following this, and it was decided that a more targeted approach to recruitment was required after the Christmas break.

The results of the initial VESPA questionnaires were used alongside maths teacher recommendations and student responses to a VESPA reflection completed in class to identify a target group of 28 students. Of these, 7 were already working with either an achievement coach or a maths support tutor so were not approached in order to avoid contamination of the results. The remaining 21 students were personally approached in January by their allocated coach, who provided an information letter about the coaching process [appendix 7] and invited them to an initial coaching session. 20 of these students agreed to attend an initial coaching session and 17 of those actually attended. Following

this, 10 of these students continued to attend coaching regularly. In addition, 3 more students joined the coaching programme later, at the beginning of February following the results of the November GCSE examinations in which they had not been successful. In total 14 students form our coaching cohort for analysis.

During cycle 1, coaching was promoted to all GCSE students with the opportunity to sign up for sessions. At the end of this cycle, the AR team met to discuss the progress of the coaching intervention and review recruitment and attendance. The minutes of this meeting were reviewed and used to put a plan in place to recruit for cycle 2 as detailed above.

At the end of cycle 2, three focus groups were held with coachees. It was decided to group the coachees who had been working on similar goals together to gain a richer insight into their experience by promoting discussion between them. One group had been working on Practice and Systems related goals, another on Attitude goals, and the final group was selected as they had not engaged as well with the coaching process, as was reflected in their attendance to coaching sessions. We were interested to find out why, and investigate how the impact of the sessions on these students compared with the others. It was telling that only one of the four students invited to this focus group actually came on the day.

A focus group was held with the three coaches for them to discuss their experiences of the intervention and share their thoughts and feelings. Coaches' reflective diaries were analysed throughout the research period to continuously assess the impact of the coaching sessions and identify any areas for improvement. In addition to the qualitative data, 10 of the coachees completed the VESPA questionnaire at the end of the research period providing some quantitative data for analysis in comparison with their baseline questionnaire results.

Data Collection Design

The elements of data collection are detailed in *image 1*

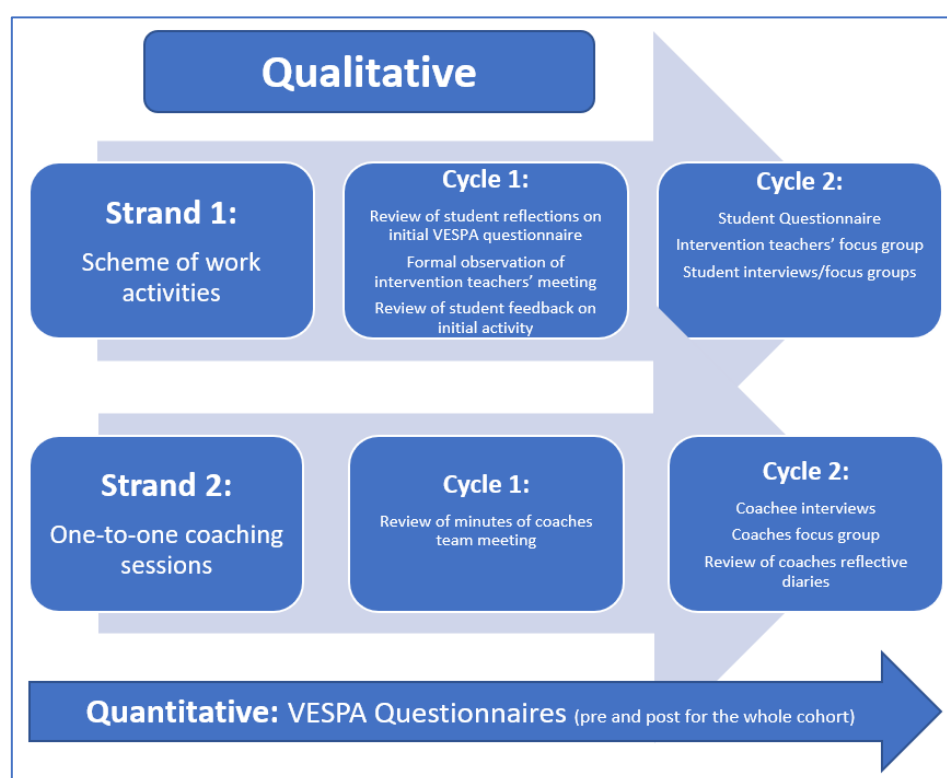


Image One: Flow Chart depicting data collection methods and cycles

Thematic Analysis

All focus groups and interviews were conducted with an interviewer and a note-taker present. The note-taker reviewed the recording 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. The data was then reviewed and discussed by the whole Action Research team to triangulate it and give a holistic view. The discussion was based on the themes that had arisen from each interview or focus group to compare and contrast all the evidence and identify 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. Researchers only saw anonymised data from other settings with any identifying characteristics such as names and dates of birth removed from the data. Data and recordings are stored securely, on password protected laptops. Original recordings were destroyed upon completion of the research report. When comparing the VESPA questionnaire results, only responses from students who had completed the questionnaire twice, at the beginning and end of the research period, were included. We excluded any results where it was unclear when they had been submitted.

Aims

What impact do classroom interventions and 1-to-1 coaching sessions based on the VESPA Mindset model have on GCSE resit students?

What impact does mindset intervention have on students' attitude towards maths?

How does the impact of the activities compare between the classroom and 1-to-1 settings?

What is the wider impact of mindset intervention?

What are the barriers to students engaging with mindset activities/coaching?

Results

VESPA Characteristics

Oakes and Griffin (2016) define the VESPA characteristics as

Vision
Effort
Systems
Practice
Attitude

Table 1 shows the VESPA questionnaire results from the initial questionnaire, completed in September 2022 (cycle 1), and from the end of the research period in May 2022 (cycle 2) for the main cohort of 94 students who took part in in-class VESPA activities only. Each characteristic is measured on a scale of 1-to-10.

	Cohort (94 students)					
Cycle	V	E	S	P	A	Overall
1	4.7	5.9	6.1	4.7	5.3	5.3
2	4.6	5.0	5.4	4.2	5.1	4.9
Difference	-0.1	-0.9	-0.7	-0.5	-0.2	-0.4

Table 1: VESPA questionnaire results for the main cohort

Students' initial VESPA questionnaire results identified their lowest scoring characteristics as Vision and Practice, followed by Attitude. This was the same at the end of the intervention. In cycle 2, the VESPA scores for the main cohort of students decreased in every aspect.

In contrast to the VESPA questionnaire results, 93% of the 30 students who responded to the student survey felt that their mindset had improved in maths, with 40% saying it had improved a lot. 80% of these students also felt that their mindset had improved outside of maths (Figure 1)

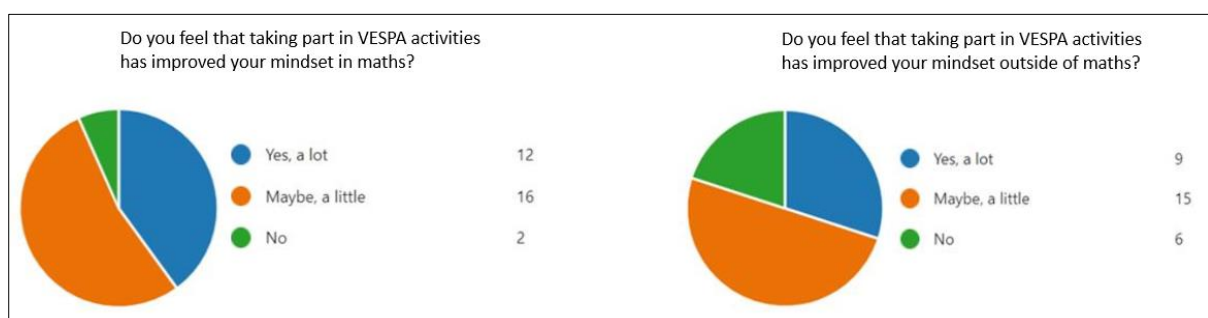


Figure 1: Graphs showing responses to student survey questions regarding improvements in mindset

Table 2 shows the VESPA questionnaire results for 10 of the 1-to-1 coaching students. These students received 1-to-1 coaching interventions of varying lengths, between 3 and 10 sessions in addition to participating in in-class VESPA activities.

	Coachees (10 Students)					
Cycle	V	E	S	P	A	Overall
1	4.4	4.7	4.9	3.2	3.6	4.1
2	4.8	4.7	5.3	4.0	5.1	4.7
Difference	0.4	0.0	0.4	0.8	1.5	0.6

Table 2: VESPA questionnaire results for the coachees

The average VESPA scores for the coachees increased in every aspect except Effort where the score remained static. This demonstrates a positive impact on the mindset of these students. All coachees chose to set at least some goals relating directly to either Practice or Attitude. These characteristics are where the average scores have increased by the largest amount, indicating that this targeted intervention had a positive impact on these characteristics.

Attitude

Four students were referred for coaching due to having particularly low Attitude scores. Interestingly, these were all females. They set goals around thinking more positively, feeling less anxious in exams and improving overall self-confidence. VESPA questionnaire data for these 4 students shows their average Attitude score increased from 2.25 to 6 (Table 3).

	Cycle 1	Cycle 2	Difference
Student 1	3	8	5
Student 2	3	7	4
Student 3	2	5	3
Student 4	1	4	3
Average	2.25	6	3.75

Table 3: Attitude scores from cycle 1 and 2

The biggest increase for an individual student was from 3 to 8. In their final coaching session, this student stated they felt their progress towards their ultimate goal of improving confidence in exams and performances was 10 out of 10 (coach 1, reflective diary, 2022).

Three of these four students participated in a focus group. They repeatedly mentioned that having strategies to combat negative thinking helped them to feel more confident and improved their self-belief (Student 7, FG 3, May 2022). One student was able to articulate that they had always wondered how people become more positive and stayed positive when 'you've been negative all your life', but they now realise that people have strategies to help them and 'it just takes time, everyone isn't that perfect you know, and you've just got to keep doing it' (Student 7, FG 3, May 2022). The students agreed that they had found using the strategies in the activities, such as giving their inner voice a name or keeping a thought diary, 'weird' at first as they weren't used to it. Once they became more familiar however they became more willing to try strategies out, with one coachee saying they was driven to 'get used to it because I know it's going to benefit me' (Student 6, FG3, May 2020).

A big change for these students was from thinking that they would never be good at maths to feeling it was something they could achieve now. One student commented they 'worried a lot less, not in the sense of I don't care about it, but in the sense of, like just trusting myself not even just in the exam but personally' (Student 6, FG3, May 2022). Feeling more confident and less stressed or worried was typical of students in this group. Another teacher

recognised that a coachee was now 'much calmer in class and doesn't stress as much' (Teacher 6, Teacher Focus Group, May 2022). It was interesting that the teachers who noticed changes had also been coaches, although they didn't coach their own students. No other teachers had noticed any significant changes in students being coached. This could perhaps be because the coaches had become more attuned to possible changes due to being more involved.

Coaches were able to describe changes they had seen in these students such as becoming more rational in their thinking, catastrophising less and displaying more resilience (Coaches FG, May 2022)

One teacher was able to identify changes in two of their students who had participated in 1-to-1 coaching within their maths lessons. One student was described as previously being very negative about themselves and their maths ability but once they began 1-to-1 coaching, they would 'come in and be like a different person- more chatty and cheerful, more confident and willing to have a go' (Teacher 1, Teacher FG, May 2022). Another had visibly improved in confidence over the course of the intervention, becoming much more willing to interact with peers and volunteer answers in class (Teacher 1, Teacher FG, May 2022).

Another teacher commented that after delivering the in-class intervention, there had been an improvement in the general confidence of their students (Teacher 3, Teacher FG, May 2022). They were hesitant to attribute this directly to the intervention however, citing other factors that could influence a student's confidence in maths at college such as the new environment, a new teacher or simply improving their maths skills over the course of the year.

Practice and Systems

Ten coachees set goals relating to the Systems and Practice elements of VESPA, choosing to particularly focus on improving their revision techniques and/or time management and organisation. The VESPA activity Mission and Medal (Oakes and Griffin, 2017) was one of the most popular tools with coachees interviewed, with 4 out of 8 specifically mentioning this. One coachee said that this had helped them to keep on top of their workload by using their study periods more effectively so that 'I don't really have to do much college work at home now as I am always doing it in college' (Student 1, FG1, May 2022), whilst another told their coach that it had helped them to keep track of how they were spending their time and stop leaving things until the last minute 'when [coach] gave me that timetable to help me organise myself, it made me manage my time a lot better and that helped me manage my day a lot better' (Coach 1, Reflective Diary 2022). Student 3 (FG1, May 2022) found sharing their timetable with a parent had helped have further accountability as 'she kinda makes me stick to it'. It was clear that this structure had been beneficial for all coachees that tried it and has now become a habit that will help them stay organised in the future.

Coaching sessions gave coachees the skills to revise more effectively. With the cancellation of exams over the previous two years due to Covid-19, some of these students had never had to revise properly before, with one coachee saying they had 'never really had to revise. Always struggled with revision. Automatically my mind goes to flash cards but they don't really actually help' (Student 3, FG1, May 2022). The same student also said that they 'feel a lot more confident going to exams. Less panicky, because I feel more organised like with my revision' (Student 3, FG1, May 2022). This was common in other coachees who had experienced reduced exam anxiety and worry after improving their revision or organisation.

Students taking part in in-class VESPA activities also found those relating to revision most effective. 9 of the 30 respondents to the student survey mentioned they could better identify what or how to revise after taking part in activities such as the Practice Questionnaire or Bottom Left.

Motivation and Engagement

Coaching

There is some evidence that coaching sessions supported coachees with their motivation towards maths and their wider studies. Student 2 said that having their coach to be accountable to motivated them to ensure they completed the goal or task they had set themselves (Student 2, FG 1, May 2022). Another coachee said that whilst they didn't enjoy maths more than before, their newfound confidence meant that they were better able to motivate themselves to work harder as they believed they could be successful now (Student 5, FG 3, May 2022). One coachee said that they had turned the thought of failure into something more positive and rather than worrying or stressing about it, were now using it to motivate themselves to put more effort in (Student 6, FG 3, May 2022). Another agreed saying that 'Failure makes you improve, that's the first step in progress' (Student 7, FG3, May 2022) representing a remarkable improvement in attitude from the start of the coaching period.

However, students did not always engage well with the coaching programme. As mentioned above, recruiting students to be coached was difficult, even after they were personally approached by a coach. Those who attended an initial coaching session did not always come back and participate in further sessions. Even those students who did engage with coaching and felt it was important to them did not always remember to attend their allocated session without receiving a text message reminder on the day. Coaches found this very frustrating and sometimes quite demotivating as it made them question the impact their sessions were having on the students (Coaches FG, May 2022).

Coaches and coachees were questioned about possible reasons for the lack of engagement. Coachees were surprised to learn how few students had taken part, with one commenting 'where is everyone else?' (Student 1, FG1, May 2022). When asked, students in focus group 1 (May 2022) said that they had all told their friends that they were attending coaching and weren't embarrassed about it. When asked if their friends would benefit from coaching too, one commented 'they don't need to, they are already smart lads' (Student 1, FG 1, May 2022) and another felt 'I am the slow one out of them' (Student 3, FG1, May 2022).

Coaches suggested a number of factors that could have led to coachees failing to attend their coaching session, or that could have been barriers to other students participating such as conflicting commitments, a lack of free time or disorganisation (Coaches FG, May 2022). It should also be noted that the college operates a three-day timetable for vocational students which doesn't leave them with many study periods or free time to socialise, which is also likely to have impacted on recruitment. It was also mentioned that sometimes 'having that accountability, knowing that you were going to ask them for their work in the next session, was sometimes negative and made them not want to come' (Coach 2, Coaches FG, 2022) as coachees may not have wanted to admit to their coach that they hadn't achieved a goal and so decided not to attend at all.

Coachees agreed with some of these reasons and also suggested that deadlines for assignments or exams in other subjects could sometimes take priority over coaching sessions (FG1, FG3, May 2022). Another issue identified by coachees was that coaching

sessions did not appear on their online timetables, making it easier for them to forget about them (FG1, May 2022)

Student 5 did not attend coaching sessions consistently even after receiving reminder text messages. In the focus group, it was clear they were not especially committed and hadn't really taken responsibility for their actions, often talking about having thought about the targets they had been set, and the session making them think more, but not often taking any actions towards the goals they had set (FG2, May 2022). When asked how he could have improved his attendance, he suggested it would be useful if his coach had come to find him in person (FG 2, May 2022), suggesting he had taken little personal responsibility for or ownership of his goals.

In class

Teachers reported varying levels of student engagement with the in-class VESPA activities. They all agreed that engagement was better when the activity could be related directly to maths (Teacher FG, May 2022). It was noted that 'The best were the revision skills ones because this is important to them' (Teacher 1, Teacher FG, May 2022). The Practice Questionnaire, which encouraged students to audit their current revision techniques and try out some new ones, and Building Independent Learning, which coincided with feedback from a mock exam and so could be applied directly to their current progress in maths, appeared to have the best levels of engagement from students (Teacher FG, May 2022). The long-term impact of these was questioned however, as two students had no recollection of completing an activity in class when he was asked about it later in a 1-to-1 coaching session (Coach 2, Reflective Diary, 2022).

It was also evident that teachers' engagement with the activities was varying. They were described as sometimes 'taking up too much time' (Teacher 4, Teacher FG, May 2022) or it being 'hard to incorporate them into lessons' (Teacher 5, Teacher FG, May 2022) due to teachers being unfamiliar with the content and finding it difficult to judge how much lesson time to plan for delivery. The GCSE maths course is taught in just 2x 1 hour 10 minute lessons per week and it was questioned whether the mindset intervention had had a significant enough impact to warrant taking time away from the delivery of actual maths content (Teacher FG, May 2022).

Some teachers had adapted the supplied resources to suit their classes (Teacher 2, Teacher FG, May 2022). Others did not appear to have spent as much time preparing or familiarising themselves with the content. One teacher described liking having the resources supplied as 'I didn't feel comfortable in the delivery. It was good for just letting the students get on with it' (Teacher 5, Teacher FG, May 2022). The same teacher also said that they had not looked at any of the student responses to the activities, indicating that they hadn't really bought into the intervention. This was in contrast to other teachers in the group who found that 'it was good for building relationships' (Teacher 2, Teacher FG, May 2022) and 'knowing things like [their responses to a VESPA activity] makes it easier to build relationships with [students]' (Teacher 1, Teacher FG, May 2022).

There was some discussion in the Teacher Focus Group as to whether different groups of students reacted differently to the activities. One teacher noted that 'it was surprising how some groups really took to certain activities' (Teacher 1, Teacher FG, May 2022), whilst several others felt that all of their groups reacted the same. There did seem to be some correlation between the extent to which teachers in the discussion had 'bought in' to the mindset intervention and how much impact the teacher felt it had had on their students, with

one teacher noting 'we can't expect our students to be enthusiastic if we aren't' (Teacher 1, Teacher FG, May 2022)

Goal Setting

All coachees who were interviewed said that they had found the process of goal setting unusual or difficult at first and it had taken them some time to get used to it (FG1, FG2, FG3, May 2022). This was also noticed by the coaches, with one commenting 'the goal setting process was huge. Some of them had never had that structure before, never been asked what their goals were.' (Coach 3, Coaches FG, May 2022).

It was clear that student 5 (FG2, May 2022) had not engaged well with the goal setting process, as they talked about having had goals set for them, rather than considering themselves an active participant in the process. All other students said that they had found the process useful. Student 4 (FG1, May 2022) exemplified this, saying that they had never set goals or targets for themselves before, but this really helped them, and they will definitely continue to do this in the future and as an adult. Students realised that goals could be flexible and broken down into smaller more achievable goals, with one commenting 'I like how it's flexible instead of one big goal' (Student 2, FG1, May 2022) and another recognising 'it's just little steps, but I know if I keep what I've learned and keep rebuilding it in my head it's going to help' (Student 6, FG3, May 2022). Students found that they got better at setting goals as the coaching process progressed (FG3, May 2022) and that the structure of doing this regularly helped them to manage their time better and be more productive (FG3, May 2022). Although none of the coachees felt that they had achieved their ultimate goal yet, they could all identify how much progress they had made towards it due to the setting and reviewing of weekly goals.

The Experience of Coaching

When interviewed, all three coaches agreed that the role of coach was very different to their teaching role and that they had not found it easy. (Coaches FG, May 2022). One coach said that they did not feel fully trained for the role (Coach 3, Coaches FG, May 2022), with another suggesting that 'It's definitely different to what we're used to, out of the comfort zone' (Coach 1, Coaches FG, 2022). The third coach agreed with this stating 'I feel like this whole year has been training. I know what I'm doing now, but a lot has been practising and trial and error' (Coach 2, Coaches FG, May 2022). When asked if coaching had changed them as a teacher, coaches reported feeling 'more empathetic to students now, like I understand what else they've got going on, like their course commitments. Sometimes they feel like they're being pulled from pillar to post' (Coach 1, Coaches FG, 2022).

It was agreed that, where possible, coachees would not be interviewed by their own coach to avoid potential bias. When listening back to the coachee focus groups, two of the coaches were surprised by the extent of the impact the coaching sessions had had on their coachees. Student 1 (FG1, May 2022) had clearly had some major breakthroughs in organisation, motivation and college-life balance that had not been immediately obvious to their coach, who found it difficult to identify any impact whilst the sessions were taking place (Coach 3 Reflective Diary, 2022). Similarly, Coach 2 was surprised to hear their coachee (Student 7, FG3, May 2022) mention the impact of giving their inner voice a name and learning to dismiss it had had on their mindset. The coach did not feel like this activity had gone very well during the original coaching session, indeed describing it as having 'gone down like a lead balloon' (Coach 2 Reflective Diary, 2022), but it was clear that the coachee had

continued to use this strategy outside of the coaching sessions as they felt 'It just takes time, everyone isn't that perfect you know, and you've just got to keep doing it, it's just the starting point' (Student 7, FG3, May 2022) and it had helped them to begin to think more positively.

100% of coachees interviewed said that they would participate in coaching again given the opportunity, although some hoped it wouldn't be required as maths was the area they needed the support and they 'hope to pass maths, so no' (Student 3, FG1, May 2022). Some said that they would do it again but choose a new goal next time, as they felt capable of reaching their current goal independently now (FG3, May 2022). The coachees who took part in focus group one really benefitted from being in the group setting and discussing their experiences with each other. They said that it would have been nice to have occasional group sessions in addition to their one-to-ones to discuss their experiences and realise that they were not the only ones with these issues. All coachees also said that they would recommend coaching to other people. One student said that as the sessions progressed and the relationship between coachee and coach develop, the sessions could also 'help people personally rather than academically, perhaps even with mental health' (Student 1, FG1, May 2022), although it is important to remember that coaching sessions should not replace therapy. Even the student who did not engage as well with the sessions said that he would recommend coaching sessions, and would even consider participating again next year and 'actually try to work on the stuff I was told, rather than just keep it in mind' (Student 5, FG2) although they weren't really sure how they would motivate themselves to attend better next time.

The Intervention at Blackpool

The results for the students taking part in the in-class intervention at Blackpool and The Fylde College are similar to those observed at Runshaw College.

Cycle	V	E	S	P	A	Overall
1	5.0	5.1	4.6	4.4	5.6	4.9
2	4.7	4.9	4.1	4.3	5.4	4.7
Difference	-0.3	-0.1	-0.4	-0.2	-0.3	-0.3

Table 4: VESPA questionnaire results for students at Blackpool and The Fylde College

Table 4 shows that average scores decreased in all aspects of VESPA for Blackpool students too. Interestingly, Effort decreased the least for these students, in contrast to Runshaw, where this score saw the biggest decrease. Again, the VESPA scores don't seem to match with students' own perceptions, as 8 out of 11 students said taking part in the activities had improved their mindset in maths at least a little, with 64% saying the same outside of the maths classroom.

Discussion

Perceptions of Mindset

One of the most interesting findings is the contrast between the decline in VESPA scores and the students' perception that their mindset had actually improved both in maths and outside the maths classroom. As a research team we discussed possible reasons for this in detail. There are several VESPA questionnaire statements which we feel students may have rated more positively at the start of the research period than at the end. Examples of these are

- I use all my study periods effectively
- My books/files are organised
- I've worked out that attending college/university is a good choice for me
- I plan and organise my time to get my work done
- I bounce back after disappointment or failure
- I am confident in my academic ability

Several possible reasons were identified for this. Students are not used to having study periods at school. They may have had good intentions of using them effectively at the start of the year, but not achieved this throughout the year. At school often teachers will explicitly tell students how to set out their work and organise their books and folders. Some students may have found they weren't as good at doing this independently with less support at college and feel less organised now than at the start of the year. Students may not be enjoying their college course.

Many of these students have never sat an external examination due to Covid 19 cancellations and therefore never had to organise and motivate themselves to the same extent as they have this year. Similarly, this may have been the first time they have experienced academic setbacks and had to bounce back from them. Their first experiences of this may have led to them feeling less confident in their academic ability at the end of the research period, and the second VESPA questionnaire was completed as students facing external exams for the first time.

At college, students may have a wider range of peers to compete with or compare themselves to. Oakes and Griffin found that when students were asked about how much effort they were putting in, they 'were making a subjective judgement based on what they thought was 'average' or 'normal'. And they took that reading from their peers' (Oakes and Griffin, 2016, p.32). It is likely that at the end of the research period, students had a wider and more varied group of peers at college than they did at the start, when their frame of reference may have been a smaller group from school, perhaps all with similar characteristics. This could have led to students rating themselves quite differently in the second questionnaire than the first with a much larger frame of reference.

There are other considerations that should be made regarding the reliability of the VESPA questionnaire data. The questionnaires were completed in a maths lesson, and although the questions do not relate directly to maths, this could have skewed how the students responded to them. Teachers noted that some students completed the questionnaire very quickly and it was unlikely they had spent enough time to give sufficient thought before answering the questions, meaning the results may not be a true reflection of their mindset. Indeed, one student admitted in the Student Survey (May 2022) that their VESPA report wasn't accurate because they hadn't answered the questionnaire accurately, and we feel that this is likely true for more students. Overall, we feel that the VESPA questionnaire is a

good tool for establishing an initial picture of cohort mindset scores and did enable us to identify students who would benefit from participating in 1-to-1 coaching. But as a tool to measure the impact of the intervention, the points mentioned above would all need to be taken into consideration and adaptations made in any future iteration of this research.

Upon completion of the second VESPA questionnaire, student 1 was excited to see their new scores as they felt their coaching sessions had had a huge impact on their mindset. However, they were very disappointed to see that they hadn't really changed, improving by 1 for Vision, Effort and Practice, and staying the same for Systems and Practice. They, their coach and their class teacher had all seen improvements in their mindset, but they still found these small changes quite demotivating. Further research is required into why positive changes observed by students, coaches and teachers are not always reflected in their VESPA scores.

Confidence

Confidence in maths improved for most coaching students, with coaches commenting that even those who weren't working specifically on attitude goals became more confident throughout the coaching period, more willing to ask for help and admit if they were struggling (Coaches FG, May 2022). Reasons identified for this include

- learning to think more positively
- feeling better prepared due to developing better revision techniques
- feeling better prepared due to managing time better
- building confidence through setting and achieving weekly goals.

All too often in GCSE resit Maths we see students who don't want to try because they see a grade 4 as being insurmountable. It was very encouraging to hear that students were positive even though they knew they might not get the grade 4 this time; they were able to take pride in the progress they had made instead of having an 'all or nothing approach' and know that they were acquiring skills that would help them achieve their goals eventually.

There is some evidence that confidence was also impacted during in-class activities, with 3 out of 30 respondents to the student survey commenting that they felt more confident in maths as a result. We must be careful however of attributing this directly to the intervention, as students do often grow in confidence throughout their resit year due to other factors such as their new environment, new teacher and different teaching strategies.

Recruitment

Coaches were very disappointed and sometimes demotivated by the difficulties in encouraging students to sign up for coaching, and in continually having to remind those that did to attend. Having seen the positive impact this aspect of the intervention had on the coachees, this is something we are aiming to improve in the future. If we could reach more students, either through targeted recruitment or group sessions, it could have a greater impact on motivation for resit students, making for a more positive experience in lessons which could have a knock-on effect reaching more students.

The action research lead approached teachers from other Centres for Excellence who have more established coaching programmes for advice. They suggested that increased visibility of coaching with cross-college promotion of the programme could be a way of increasing recruitment, including whole staff buy-in to the programme. In this study, the coaching was

kept very much within the maths department as it was only available to GCSE maths resit students. They also suggested parental involvement and awareness had helped to ensure that students attended their sessions more consistently. These could both be implemented into our coaching programme going forwards.

The students in focus group one all talked about feeling different to their friends, like they were the one out of the group that most required mindset support, or that their friends were all 'smarter' than them. As a research team, we wondered whether this had been a motivator for them to take part in coaching. Perhaps these students aspire to be more like their friends. Perhaps students who surround themselves with those of a similar ability/attitude/effort level perceive they don't need the support because they are 'the same' as their friends.

Change in attitude towards maths

Although they didn't necessarily enjoy maths more, most coachees were doing more independent maths work following coaching, and most clearly felt that it was more achievable now.

'I think most of them want to do [maths] more. They feel like doing it will have an impact now. Whereas before they might have given up and there's no point revising because I'm not getting better, now I feel like a lot of them are having a go and tell me they've done revision activities. They're working a lot more successfully independently on their maths.

(Coach 2, Coaches FG, May 2022)

The other coaches agreed with this, with one commenting that 'when you ask them now where they are in terms of their goal, most of them are at a higher number. They've got something they can quantify' (Coach 1, Coaches FG, May 2022) referring to the coachees self-assessing their progress towards their ultimate goal on a scale of one to ten.

Impact

It was clear that different classes reacted differently to VESPA activities, and there was much discussion, both in the teachers focus group and between us as a research team, as to what extent the enthusiasm and buy-in of the teacher influenced that of the class. Although the teaching team were given training on the VESPA model and the activities were discussed in team meetings, some clearly did not feel comfortable delivering these to their students and that is likely to have come across in class. In future the delivery of the activities will be modelled in meetings and the content discussed in more depth to give teachers more confidence in delivery. Alternative activities could also be offered to allow teachers to choose the ones they are more comfortable with. This was not an option during this year's research as we wanted consistency to ensure the validity, reliability and accuracy of the data.

The difference between the changes in VESPA scores (table 1) for those students only participating in in-class intervention compared to those also having 1-to-1 coaching is significant. Initially we assumed that this was due to the fact that the coachees had 1-to-1 personalised support from their coaches, and it was certainly the case that 1-to-1 students were held more accountable for their actions following the completion of a VESPA activity or a coaching session. This was not the case for students completing an activity in class where although the teacher might ask a follow up question about the activity the following lesson, or

remind students about it a few weeks later, there was no requirement for students to evidence any progress made after completion of the activity.

On further reflection, it is possible that the focus of the intervention also played a part in this. The students participating in coaching all had a specific area of VESPA that they wanted to target, and spent time doing activities aimed at this characteristic. In contrast, the in-class activities needed to be a more 'one-size-fits-all' programme, with the 8 activities spread over four characteristics. We now wonder whether it is possible that targeting one aspect of VESPA specifically, and seeing tangible improvements in this area, has increased confidence and motivation and led to improvements across the board for coachees. On the other hand, those that only did a small amount of work on several different characteristics in class may not have felt any significant improvement in any of them, and this appears to be reflected in the VESPA scores.

One of our biggest motivators in continuing this research was the positive impact the in-class activities had on students' VESPA scores in last year's study where Effort, Systems and Attitude increased on average by 0.2, 0.3 and 0.8 respectively. This was in contrast with a control group where scores in 4 of the 5 characteristics decreased. We had hoped to replicate and hopefully improve on this impact in this study. However, this year's results are very different. There are clear differences in external influences on students between the two years, such as last year's students going through more than one lockdown causing differential learning loss, and this year's students having their first 'normal' year in college whilst recovering from this, facing external examinations and assessments for the first time. It is difficult to determine which, if any of these factors have also impacted on students' mindsets and VESPA scores.

It is clear that further investigation is required into both the impact of the VESPA model and other factors that influence the mindset of GCSE resit students.

Conclusions and Recommendations

Conclusions

The fact that VESPA scores reduced for the main cohort indicates that GCSE Maths resit students still clearly require a lot of support with aspects of their mindset. Our findings suggest that coaching focussed on one specific VESPA characteristic could lead to an improvement across all aspects. Having Practice as a specific focus for the in-class activities could help with both student and teacher buy-in, as these activities were best received in class, and also influence improvements in other areas.

Improved confidence, organisation and revision techniques were commonly referenced by students who had taken part in 1-to-1 coaching. As teachers, we felt that these aspects would potentially be less developed in current students due to Covid-19 disruption and exam cancellations. Supporting students with these skills ought to improve achievement and therefore progression of GCSE Maths resit students.

The study was summed up succinctly by one classroom teacher:

'I think it's important to work on mindset, but is it important enough to take time away from maths? Maybe these results will show us, or maybe we'll never know'

(Teacher 1, Teachers FG, May 2022)

Although we haven't got the model quite right yet, there is evidence of positive impact of VESPA activities and one-to-one coaching on GCSE resit students that warrants further investigation.

Recommendations

The timing of VESPA activities within the GCSE Maths scheme of work should be considered carefully to ensure they will have maximum impact. Some activities are suited well to encouraging students to prepare for assessments, or in feeding back from a recent assessment for example and should be timed accordingly.

The activities could be more impactful if all teachers have bought into the mindset intervention and are confident in delivering these to their classes. This could be achieved through team training and/or discussion and planning of activities in team meetings, perhaps modelling the delivery and discussing any adaptations required before use in class.

Attendance and retention to coaching sessions could be improved by making the sessions appear on a student's timetable. Informing parents of a student's commitment to coaching sessions and encouraging cross college promotion of coaching opportunities, including by SLT and other departments, may also support this improvement. Anyone considering implementing this or a similar intervention should be aware that a clear attendance and recruitment strategy will be required to help ensure the intervention is impactful.

The impact of the in-class VESPA activities could be improved by finding a way to make students accountable for taking the actions they identify or are suggested by the activity. Accountability to their coach clearly made coachees more likely to take actionable steps towards their goals. Implementing something similar in class could encourage students to continue to use the skills they develop independently.

Offering group coaching sessions in addition to one-to-one support could support coachees further by allowing them to work with peers with similar goals to them. This has the potential to encourage them to share strategies and realise that they are not alone in their struggles.

The coaching intervention will continue next year at Runshaw College and will become a part of the support offered to resit students via our Maths and English hub. This year's action research teachers will support the hub instructor to plan and deliver the sessions. Small group sessions will also be offered to students who require similar support. An initial programme is being put together offering 4 activities relating to each VESPA characteristic as a starting point.

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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: 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?

Coaching Agreement

What Coaching is

1. Coaching is a process designed to help you achieve your goals.
2. Coaching is non-directive in the sense that your coach will never tell you what to do. Instead she will listen, ask questions and help you make your own decisions.
3. Coaching is collaborative in the sense that your coach will work with you as you try to achieve your goals. She will help you to generate ideas, identify resources and overcome obstacles. Ultimately however, you alone are responsible for your performance.
4. At the beginning of coaching, your coach will help you set your ultimate goal, which is what you want to achieve by the end of coaching. At the beginning of each session you will then set a smaller weekly goal, which is what you want to achieve by the next session. Your coach will help you develop plans to achieve your goals.
5. Coaching is not counselling or therapy. The purpose of counselling/therapy is to reduce emotional distress. The purpose of coaching is to help you improve your performance or achieve practical goals. As you work towards your goals, it is normal to experience negative emotions, eg. Dejection. However, if you find that you are experiencing significant emotional distress (eg. You feel overly anxious or depressed), then it is a good idea to contact the college counselling team.
6. The success of coaching depends on what you do between sessions. The sessions themselves will not lead to progress. You will need to take action each week.

Coaching Sessions: practical details

1. Coaching sessions will take place on _____ at _____ in _____.
2. Coaching sessions will last approximately 30 minutes
3. Sessions will take place every _____.
4. There will be a total of _____ sessions.

What your coach will expect from you

1. You will arrive for your sessions on time (except in cases of emergency). If you cannot make it to a session, you will notify your coach with as much notice as possible (preferably 48 hours +).
2. During the session you will fill out a coaching form. This will include your weekly goal and the steps you will take to achieve it (ie. Your action plan).
3. Once you have created your action plan, you will do your best to carry it out. Your coach will not and cannot force you to carry it out. It is up to you to make a genuine effort.
4. You will let your coach know what you find most and least helpful. This will help them to tailor the coaching to suit your needs.

What you can expect from your coach

1. Your coach will arrive on time (except in cases of emergency). If she cannot make the session, she will give you as much notice as possible (preferably 48 hours+).
2. Your coach will never judge or criticise you.
3. Your coach will be focussed entirely on you and your goal. Her only agenda will be to help you make progress.
4. At times- with your permission- your coach may offer you suggestions. You are entirely free to ignore these if you do not consider them helpful.
5. Your coach may- with your permission- take notes during the session. You are free to see these notes whenever you wish. Indeed you and your coach will often create them together.
6. If you are having difficulties between sessions, you may email your coach. She will respond as soon as she can. However, an immediate response may not be possible.
7. In normal circumstances, what you discuss in coaching will not be shared with others*. However, there are certain situations in which your coach is morally and legally obliged to pass on information (for example if there is a safeguarding concern).

Coach and coachee must abide by the above terms throughout the programme. If either party fails to do so, coaching may have to come to an end.

Coach signature: _____

Coachee signature: _____

*Some of your responses may be used anonymously as part of an action research report. Please tick this box if you **DO NOT** agree to your data being used in this way ☐

Appendix 3: Initial Coaching Session Proforma

INITIAL COACHING SESSION		Date:
Name:	Coach:	
ULTIMATE GOAL:		
What have you already achieved?		
What is helping you currently / strategies already embedded?		
Any Potential Obstacles?		
What other resources are available that you may use?		
What steps could you take to begin to make progress?		
Action to be completed by next session:		
Agreed date of next session:		

Appendix 4: Weekly Coaching Session Proforma

COACHING SESSION RECORD		Date:
Name:		Coach:
Previous sessions goal: • Has this been achieved? • Were there any obstacles? • How has this helped you towards your ultimate goal?		
Next goal:		
Where are you currently at with this goal? (e.g. have you started it yet)		
What different options / tools do you have to achieve this goal?		
What will you do to achieve this goal by next session?		
Extra notes:		
Agreed date of next session:		

Appendix 5: Coaching Advertisement Video