Post-16 GCSE Resit Practice Review

Bart Crisp, Joe Hallgarten, Vanessa Joshua, Rebecca Morris, Thomas Perry, Lindsey Wardle

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About the Authors

The Centre for Education and Youth (CfEY) is a 'think and action-tank'. We support a wide range of organisations in making wise, bold decisions about how best to support young people. We use our research to get under the skin of key issues, aiming to shape debate, inform policy and change practice.

Head of Research Bart Crisp has over a decade of experience working nationally and internationally as an education researcher. He has worked on research into teacher professional development, and on research into supporting outcomes for disadvantaged learners.

Chief Executive Joe Hallgarten has over twenty years of experience of leading education change as a teacher, programme leader, researcher and policy analyst. He has researched and published on a wide range of issues in education, in the UK and globally. He has a particular interest in curriculum, assessment, system change, the arts and creativity in education.

Associate Vanessa Joshua works on a range of research and evaluation projects, including work on race equality in education, violence reduction and trusted relationships in London, and evaluations of work experience programmes. She also supports CfEY's wider engagement work. Vanessa is a former teaching assistant.

The University of Warwick

Dr Rebecca Morris is an Associate Professor. Her research focuses on a range of topics connected to education policy and practice in the UK and internationally. Prior to this Rebecca was a secondary English teacher, working in a number of schools across Birmingham.

Dr Thomas Perry is an Associate Professor. His research and teaching are focused on the use of research and evidence to improve education policy and practice; with specialist methodological expertise in evaluation, systematic review, data analysis and knowledge mobilisation. He is a former schoolteacher and led the recent EEF cognitive science review.

Lindsey Wardle is a Research Assistant. Her research interests include education policy and practice in the UK and internationally, literacy, and the effects of disadvantage. She has previously worked in schools as a secondary English teacher and teaching assistant in North East England.

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Foreword

Education professionals, whether in schools or post-16 settings, are driven by the desire to provide every learner with the best chance to succeed in life, no matter who they are or where they come from. Our aim at the EEF is to support professionals by providing them with the tools needed to make the biggest possible impact in achieving this, especially for those learners that need the most support.

The socio-economic attainment gap grows as pupils progress through school, meaning that it is at its widest when pupils reach the post-16 stage. This stage of education is therefore a 'last chance' to try to minimise the attainment gap before most young people leave the education system. So for us, finding better ways to support GCSE resit practitioners and learners is a vital element in challenging the gap.

Further, we know that while achieving grade 4 and above at maths and English GCSE is important for life chances, success in GCSE re-takes for these subjects remains frustratingly low. To that end, we commissioned this practice review to build a more robust and objective picture of what current practice looks like within the post-16 space. This report reiterates the scarcity of robust evidence for 'what works' for resit learners, and the need for development of more post-16 interventions which consider how contextual and practical factors might influence design and delivery.

The review team also engaged with learners and practitioners across a range of settings, gathering valuable insights into the challenges the sector is facing. These discussions indicated that programmes in this space should carefully consider the nature of post-16 learners and be designed with an understanding of the various differences between pre- and post-16 provision.

As with all our publications, this review is just the start. We will now be working with the sector to build on our work in the post-16 space, most immediately by funding evaluations of programmes designed to support resit practitioners and learners. Long-term, the review will inform EEF's post-16 development work, working with sector experts to design scalable, evidence-informed interventions.

We will also continue to have an open dialogue with post-16 settings and practitioners, engaging with professionals to deliver a research-led approach and realise our mutual goal of supporting the attainment and life chances of all learners.

Professor Becky Francis

Chief Executive
Education Endowment Foundation

Executive Summary

Background and purpose

Gaining a 'good' pass in GCSE English and maths is widely viewed as important for supporting young people's academic and career opportunities and future life outcomes. Current policy means that students who do not gain a Grade 4 in English and maths in their first attempt must continue to study these subjects. Despite this attempt to have more students pass the GCSE, the proportion of resit students achieving a Grade 4 by 18 remains disappointingly low. In 2022, just 15.2% gained a Grade 4 in their maths GCSE resit, and 24.1% in English.

There are a number of significant barriers and challenges which are likely to impede the delivery of the resits and affect the outcomes for young people. Since the raising of the participation age to 18 in 2015, the post-16 sector in England has seen substantial increases in pupil numbers yet continues to suffer from a lack of funding when compared with schools and higher education. Practitioner recruitment and retention is also a challenge - in 2016, 27% of institutions reported that they did not have sufficient teachers for maths resits, and 17% for English resits. Students often face a more challenging transition between secondary school and college and their own motivations to achieve well in resits can vary, having already received a grade (i.e., below a Grade 4) which is often perceived as 'failure'.

The existing evidence base for post-16 practices is much more limited than for pupils in school settings. The Social Mobility Commission's evidence review on further education and adult learning found a particular evidence gap for 16-18 year-olds and concluded that there was a 'scarcity of evidence on what works to improve attainment among disadvantaged students' in this sector. There is also a lack of high-quality programmes targeting this age group, and where promising programmes have been highlighted within the school sector, they have rarely been evaluated with post-16 learners.

Practice review

As a response to the persistent underperformance of 16-18-year-old resit learners and the lack of a strong 'what works' evidence base in this area, the EEF commissioned the current practice review. The purpose of this practice review was to build a more robust and objective picture of what current practice looks like within the post-16 space, including what the key challenges are, and to identify questions that practitioners would like answered.

The review is a mixed-methods, practice- and policy-focused study. Working with established networks in the post-16 sector, the review team engaged with further education (FE) and sixth form colleges to collect and collate robust, high-quality data, including capturing experiences and perspectives of leaders, teachers/lecturers and students involved with post-16 study. This work sat alongside a desk-based review, which aimed to build a comprehensive understanding of interventions, and map common practices and policies.

Key findings

The desk-based review indicated that while there are numerous, diverse practices and approaches to improving provision and outcomes in post-16 GCSE resits, there are relatively few 'packaged' interventions designed specifically for this cohort and context. There was also limited overlap between approaches summarised in the desk review and those mentioned in the interviews. This may be an indicator of a post-16 environment where the use of research evidence has a limited impact on practices.

- Although there is widespread recognition of the importance of formative assessment and a broad array of practices, systems and ideas in use to enable assessment for learning, no clear trends emerged in relation to any particular techniques, tools or systems of assessment which colleagues are engaging with at this stage.

- The ability of FE institutions to recruit, retain and develop a highly skilled workforce was the biggest barrier to ensuring that learners are receiving high-quality teaching. CPD was seen by many of the interviewees as vital in bridging this gap, as it equips teachers with the skills to provide learners with effective support, regardless of their own prior level of training.

- The evidence about curriculum coverage and focus, and a tendency to opt for either a targeted or core curriculum approach, has implications for how to successfully design interventions for resits. Based on the review team's observations, the most successful approaches combine both.

- The review highlights examples of effective pedagogy from other phases and subjects using relatively well-established, evidence-informed principles related to formative assessment, cognitive science (e.g., spaced learning) or mastery approaches. While transfer of these into post-16 contexts is potentially promising, we need to know more about how these principles and practices can be effectively adapted and translated into post-16 resit contexts.

- The literature and evidence collected from the review points to the need to consider learner needs and adverse prior experiences of learning. The evidence appears to strongly suggest that success for post-16 resits, perhaps to a greater degree than in KS4 teaching and learning, requires effective integration of academic and socio-emotional approaches.

Recommendations

Based on the findings of the review, the key recommendation was that the EEF should sustain and grow its focus on post-16 English and maths for low-attaining and disadvantaged learners – including, but not limited to, GCSE resits. In addition, the review identified three categories of recommendations.

a. **Research** to better understand the context and conditions under which teaching and learning happen for lower-attaining post-16 learners, including the following:

- What do we know about creating more effective transitions between secondary schools and post-16 institutions for lower-attaining students?

- What choices do post-16 institutions make about the organisation of GCSE resit learners and how do these choices impact on outcomes?
- What are post-16 institutions doing to develop, embed and evaluate meaningful diagnostic assessment approaches for GCSE resitters, both at the outset of learners' post-16 resit studies and throughout their studies?
- What do we know about the characteristics and capacities of the (highly heterogeneous) post-16 English and maths teacher workforce?

b. **Intervention developments and trials** to generate a more robust evidence base about the impact of particular practices and interventions, including investment in:

- **Vertical transfer**: promising pedagogical practices for learners at Key Stage 4 that could be and adapted for post-16 resit classrooms.
- **Horizontal transfer**: promising pedagogical practices from vocational and academic post-16 courses for lower-attaining or English for Speakers of Other Languages that could be adapted for post-16 resit classrooms.
- **Multiple outcome/combined interventions**: programmes that deliberately and rigorously blend a small number of interventions, testing how these interventions can provide holistic support for improved outcomes.
- **Collaborative, place-based interventions**: locally-driven approaches to improvement, funding a coalition of schools, colleges, employers, local and national organisations to co-ordinate a small range of well-evidenced and well-coordinated approaches for resitters across a whole locality.

c. **Support and resources** to improve the generation and use of evidence among post-16 practitioners and institutions, including support to:

- Extend and adapt the teaching and learning toolkit for a post-16 context, and promote its use among post-16 leaders and institutions.
- Invest in the extension of the remit of Research Schools, and in new Research Colleges, to extend and develop networks and professional learning communities; to support post-16 providers with evidence use; and to provide CPD.

1. Background and Purpose

1.1 Overall background and context

Gaining a 'good' pass in GCSE English and maths is widely viewed as important for supporting young people's academic and career opportunities and future life outcomes (Hayward et al., 2014; Hodge et al., 2021; Machin et al., 2018). In recent years, greater attention has been paid to the so-called 'forgotten third' – those students who complete Year 11 without having secured a Grade 4 (equivalent to a C grade in the previous system) (ASCL, 2019). The connection between learners' social disadvantage and education outcomes is already strong as children start school, but grows over time, so the gap is widest when they reach the post-16 stage (Andrews et al., 2017).

Current policy means that, as a condition of funding for post-16 providers, students who still need to gain a Grade 4 in English and maths on their first attempt must continue to study these subjects (DfE, 2022a). Students who achieved a Grade 3 will study a GCSE resit course and will be entered to resit the qualification; those with Grades 0–2 may continue with a GCSE resit or be entered for a functional skills programme instead. Despite this attempt to have more students taking GCSEs in English and maths, the proportion of resit students achieving a Grade 4 by age 18 remains disappointingly low. In 2022, just 20.1% gained a Grade 4 in their maths GCSE resit and 28.4% achieved this grade in their English resit (Noble, 2022).

There is a range of potential explanations for this intractable underperformance and several significant barriers and challenges, which are likely to impede the delivery of the resits and the outcomes for young people (Higton et al., 2017; Ireland, 2019; Lupton et al., 2021). Since the raising of the participation age to 18 in 2015, the post-16 sector in England has seen substantial increases in pupil numbers yet continues to suffer from a lack of funding, and arguably status, when compared with schools and higher education (Lewis and Bolton, 2022; Sibieta and Tahir, 2021).

Students often face a more challenging transition between secondary school and college compared to those transferring to school sixth forms, (and most resit students change institutions post-16) (Lupton et al., 2021). Their motivations to achieve well in resits can also be variable, having already received a grade (i.e., below a Grade 4) that is often perceived as 'failure'. Resit students are likely to be engaged in technical or vocational courses, and they may not always have positive attitudes towards reengaging with the GCSE programmes (Higton et al., 2017; Ireland, 2019).

From a provider perspective, several potential challenges exist, including in relation to: teacher supply, quality and development; and curriculum planning and delivery. In 2016, 27% of institutions reported that they did not have sufficient teachers for maths resits, and 17% for English resits (IFF Research, 2016). The recruitment of teachers with subject-specific qualifications in English or maths can often be challenging (Higton et al., 2017).
16-18 year olds in England attend one of three types of institution: A sixth form based within a school; a separate sixth form college for 16-18 year olds; or an FE college which also caters for adult learners. Teachers working in FE colleges, where most resitters attend, are also

generally less well paid than those in schools (Sibieta and Tahir, 2023). There is also less support and professional development available for post-16-based English and maths resit teachers. However, steps have been taken to address this in recent years, particularly in relation to maths (ETF, 2023).

Alongside the policy requirement for students without a Grade 4 to continue studying GCSE English and maths, the government has introduced several other initiatives to support outcomes in this area. In 2018, the DfE funded the Centres for Excellence in Maths (CfEM) national improvement programme. This was managed by the Education and Training Foundation (ETF, 2023) and aimed to support the improvement and development of Level 2 (i.e. GCSE/Functional Skills) teaching and learning in post-16 settings. A total of 21 centres across the country were designated as Centres for Excellence. One of the key elements of the programme involved colleges being involved in collaborative action research project, and many of these studies are included in our review below. The programme ended in March 2023, and a series of legacy resources are currently being developed.

A bursary of £26,000 for maths and £22,000 for English has been available for students training to teach in further education (FE) (DfE, 2022b). In response to the Covid-19 pandemic, a 16 to 19 tuition fund was also introduced to support small-group tuition, prioritising those who attained Grade 3 or below in English and maths, and this was later extended to those from the 27% most socially deprived areas, based on the index of multiple deprivation (ESFA, 2022 a,b,c). Additionally, a post-16 basic maths premium is being piloted and evaluated as part of an Education Endowment Foundation (EEF) trial (DfE and ESFA, 2018).

The Prime Minister's recent announcement that all students will study maths until age 18 has not yet transferred into policy, programmes or funding, but may also impact on this government's approach to GCSE maths resits (Gov.uk, 2023a).

The existing evidence base for post-16 practices is much more limited than for younger pupils in school settings. The Social Mobility Commission's evidence review on FE and adult learning found a particular evidence gap for 16- to 18-year-olds. It concluded that there was a 'scarcity of evidence on what works to improve attainment among disadvantaged students' in this sector (Social Mobility Commission, 2020). The EEF's review, 'Improving Level 2 English and maths outcomes for 16 to 18 year olds' identified a similar evidence gap (Maughan et al., 2016). There is a lack of high-quality programmes targeting this age group. Where promising programmes have been highlighted within the school sector, they have rarely been evaluated with post-16 learners.

The EEF has commissioned the current practice review to respond to the persistent underperformance of 16- to 18-year-old resit learners and the lack of a strong 'what works' evidence base in this area.

1.2 Rationale and purpose of this review

This practice review aims to build a more robust and objective picture of what current practice looks like within the post-16 space, what the key challenges are and the questions that practitioners would like answered. Long-term, the review will inform the EEF's grant-making process, including early pipeline development work focusing on post-16 learners, which will involve working with sector experts to design scalable, evidence-informed interventions.

This review has already informed the EEF's next steps. In February 2023, the EEF launched a new funding round dedicated to interventions that could support practitioners and learners in GCSE maths and English resits (EEF, 2023a). Influenced by the review's early findings, the application guidance (which allows for a range of applications from development projects to pilots to efficacy to complete effectiveness trials) suggested the following indicative (but not exhaustive) areas of interest:

- tutoring interventions for this age group, and in particular any that are specifically targeted at learners taking resit exams
- interventions that could improve attendance at resit classes
- interventions that could support resit learners with a holistic approach to GCSE resits – for example, improving motivation or confidence as a path to increasing academic engagement and attainment
- continuing professional development (CPD) interventions for maths and English teachers, including any curriculum-focused approaches
- interventions that are designed to support vocational and technical practitioners to include English and maths content in their classes, to supplement resit classes
- interventions that support learners with the transition from school to FE.

1.3 Overall approach

This review was carried out through an in-depth, mixed-methods, practice- and policy-focused study. Working with established networks in the post-16 sector, the review team engaged FE colleges and sixth-form colleges to collect and collate robust, high-quality data, including capturing the experiences and perspectives of leaders, teachers/lecturers and students involved with post-16 study. Although we engaged with sector leaders who could talk from a schools' perspective, and included Sixth Form Colleges in our recruitment strategy and our sample, our primary focus for fieldwork was FE colleges, given that the majority of GCSE resitters attend these institutions. We were also informed by multiple stakeholders that FE colleges were and are generally agreed to be the part of the sector which confronts the most profound challenges in terms of achieving success in relation to resits policy.

Key to our approach was the rapid synthesis of multiple perspectives, one that listened profoundly and inclusively to a diverse range of voices to produce a recognisable, coherent picture of practice. Table 1 summarises the approach. Chapters 2 and 3 provide more information about the specific methodological approaches taken to each strand.

Table 1: Review strands and methods

Strand	Summary of methods
1. Desk-based review to: – build a comprehensive understanding of interventions, policies and common practices – understand socioeconomic and other variations between settings	• Review and analysis of academic, policy and practice-related literature. • A rapid systematic search of UK-focused educational academic databases for relevant post-16 GCSE practice/policy-focused articles. • Searches for Department for Education (DfE) and other government-produced policy documents relating to post-16 GCSE resits. • Searches of practice-focused sources, for related teaching, learning and CPD resources, support guides and information. • Analysis of all relevant texts to identify interventions, policies and practices.
2a. Leader and practitioner interviews to: – understand the drivers of successful practices and approaches – explore barriers to further progress	• Twenty online, semi-structured interviews (with 5 principals, 5 heads of department/sixth form or other senior leaders, 5 teachers/lecturers and 5 sector leaders). • Using data from the DfE's School and College Performance Data site, identification of a range of post-16 settings for contact and participation in the project – settings that had strong GCSE resit outcomes (data included attendance rates, drop-out rates and academic results).
2b. Site visits with student focus groups to: – gain a more granular understanding of how successful practices impact on student achievement and engagement – explore student perceptions of other means to drive improved engagement	• Selection of four post-16 sites to ensure variation across different types of settings and student demographics. • Focus groups with a mix of Year 12 and Year 13 students to understand current resit practices and levels of engagement.

Strand	Summary of methods
3. Analysis and synthesis to: – identify connections between evidence from different strands of the review – establish key conclusions and recommendations for EEF to take forward in internal planning and external commissioning work in relation to GCSE resits	• Identification of initial key findings across the review team, and testing these with the EEF during an interim presentation. • Identification and refinement of synthesised conclusions and recommendations across the review team as part of final reporting.

This review's scope is limited to exploring *practice* associated with post-16 GCSE resits in English and maths. This has involved identifying, mapping and analysing the approaches, interventions and initiatives used to support the attainment of resit learners. While our work has also surfaced people's perspectives and experiences of post-16 *policy* reforms, a comprehensive description or discussion of these issues is beyond the scope of this study. Despite this, we acknowledge the interconnected nature of policy and practice concerning the delivery of post-16 GCSE resits. We hope the review provides informative insights for policymakers, sector organisations, practitioners and researchers and contributes to the broader national debate on this vital social justice and educational improvement issue.

2. Desk-based Literature Review

This section of the *Post-16 GCSE Resit Practice Review* report focuses on the literature review strand of the project. We provide a summary of the strand, including the literature review methods, an overview of the literature located, and a summary of studies of post-16 resits and the evidence they provide. Further analysis and discussion continue in Section 4, where evidence from across both the literature and fieldwork strands of the review are combined.

2.1 Methods

Here we provide a brief overview of the methods used for the literature review strand of this practice review. We have drawn on systematic review methods throughout to ensure transparency and systematicity in our approach and reporting in relation to the searches, screening and analysis conducted. Fuller details of each phase of the review methods are provided in Appendix 1.

2.1.1 Search strategy and results

We carried out two separate searches of the academic databases (via Web of Science), using the two sets of search terms below:

> *((“post-16” OR “Further Education” OR “FE OR college” OR “post compulsory” OR “post-compulsory”) AND (GCSE))*

The second search focused on ‘GCSE’ and the ‘resit’ nature of the qualification. We ran the following search string, again on all fields:

> *(GCSE AND (“resit” OR “re-sit” OR “retake” OR “re-take”))*

In addition to the Web of Science databases, we conducted searches of Google Scholar and Google (using adapted versions of the search terms above) to identify grey literature, including policy and practice research reports on the topic. We also hand-searched for references from an EEF-funded evidence review of interventions for improving English and maths outcomes for GCSE resit students (Maughan et al., 2016). Further studies were located via the Centres for Excellence in Maths (CfEM) website, a national improvement programme designed to support and facilitate improvement in maths outcomes for students aged 16–19 in post-compulsory settings.

The review focused on studies completed from 2010 onwards. This was to ensure that we were locating and working with the most current evidence in this field, and also to acknowledge the policy changes in this area that have occurred throughout the administration of the current Conservative government (e.g. DfE, 2011, 2014, 2022a). We did not restrict searches by country or location, as we felt it was important to engage with international work in this area, if it existed and where it was relevant. However, the specificity of the search terms used (e.g. GCSE, Further Education) necessarily meant that the majority of our outputs were UK, and mostly England-based, studies.

2.1.2 Screening and eligibility

The screening process consisted of three main stages:

- Stage 1: An initial title and abstract screen for general topic relevance (i.e., post-16 GCSE resits)
- Stage 2: A full-text screen for general topic relevance
- Stage 3: A full-text screen assessing all eligibility criteria.

Overall, a total of 340 texts were located via the searches described above. At the stage 1 screening, records were excluded if they were duplicates or deemed irrelevant. At this initial stage, 136 texts were excluded, leaving a total of 204 records for the full-text screening stages. Double screening was also carried out on 10% of the documents to identify areas of ambiguity and to ensure that all team members were applying the criteria consistently. A further 56 records were excluded at stages 2 and 3, leaving 148 remaining texts.

At this point, we recorded a summary judgement for each of the texts, using a 'Low', 'Medium' and 'High' categorisation. Low-relevance texts were later excluded; these included non-research focused texts (such as policy documents, commentaries) or studies which were broadly connected with post-16 learners but did not focus explicitly on GCSE re-sits We also applied the eligibility criteria set out in Table 2. These two stages led to a further 89 texts being removed, with 59 left for us to review. The PRISMA diagram (Figure 1 in Appendix 1) summarises the searching and screening processes and the number of texts included/excluded at each stage.

Table 2: Eligibility criteria used at the screening stage

Area	***Include/Exclude***
1. Date	***Include*** – studies conducted since 2010
2. Language	***Include*** – studies reported in English
3. Learners/ teachers	***Include*** – post-16 (age 16–19) learners engaged in (or potentially engaged in) studying for GCSE English and/or maths ***Include*** – post-16 teachers/tutors engaged in teaching/supporting post-16 GCSE resits
4. Context/setting	***Include*** – post-16 settings (FE colleges, school sixth forms, sixth-form colleges)
5. Practice focus	***Include*** – any teaching, learning, professional development, social, pastoral or wellbeing approach, practice or intervention
6. Learner and teacher outcomes	***Include*** – any outcome related to the teaching and learning of GCSE English or maths resits (academic, attendance, attitudinal, social, personal, employability, professional development)
7. Type of text/study	**Include** – report of empirical study (including literature review) examining practice in post-16, GCSE resit contexts **Exclude** – commentary/opinion or news pieces, statistical releases or analyses not related to practice/policy documents

2.1.3 Mapping, categorisation and analysis

The 59 remaining texts were placed into a new database and, for each one, we extracted and reported key information. This included the date, title and authors of each piece as well as the subject focus (English, maths, both, general/unclear) and the design/methods used in the studies (e.g., literature review, action research, interviews, survey, mixed methods or randomised controlled trial).

After extraction of all key study details, we categorised the texts based on (a) the overarching topics/themes that they were reporting on and (b) the security of the evidence that was being reported. After a number of iterations, we determined five broad categories for organising the review analysis:

- curriculum and pedagogy
- resources and technology
- learner needs, backgrounds and experiences
- teacher needs, supply and development
- leadership and organisation.

Table A2 in Appendix 1 provides examples of foci for studies included within each category.

Finally, we appraised each text for 'evidence security', giving a rating of 'High', 'Medium' or 'Low' Studies which are currently in progress yet incomplete, but which there was significant information available for in relation to their research design, have been included but given a N/A for evidence security. For the purposes of this study, evidence security refers to the strength of the evidence being presented. Key considerations were the robustness of the research design, methodological approaches and limitations, and the presentation of and claims aligning to (i.e., providing warranted) outcomes/findings (see Table A3 in Appendix 1).

2.2 Overview of statistics

In this section, we provide an overview of statistics related to our database, including subject focus, themes, methods and evidence security. First, Table 3 below summarises the subject focus of each of our studies. As can be seen, there is a clear disparity between maths and English, with a far greater emphasis on maths at post-16; over two-thirds of the studies were maths-specific, and almost a quarter were either related to both subjects or generic. The high number of maths studies is partly influenced by the inclusion of 30 action research studies completed by colleagues working in CfEM. All of these focused on areas of practice relating to GCSE maths re-sits, and so warranted inclusion in the analysis. Further analysis of this balance between subject areas and how it compares to pre-16 research can be found in Section 4 of this report.

Table 3: Subject Focus

	Freq.	Percent
English	5	8.5
Maths	40	67.8
Both	10	17.0
General/unclear	4	6.8
Total	59	100.0*

**percentages may not total 100.00 due to rounding*

We also categorised our studies into the five themes as outlined in the Methods section above (2.1.3). Overall, we had 59 studies, but many of the studies were relevant to more than one theme, which accounts for the higher frequency number seen for focus area categories in Table 4. Note that while the frequencies were calculated on a counting basis, percentages in this table were calculated against our total of 59 studies.

As may be expected, curriculum and pedagogy and learner needs were the most prevalent themes, with these foci present in 69.5% and 50.8% of our 59 studies respectively. We found just under two-fifths of studies discussed resources and technology; as we discuss later, many of these studies took place during the Covid-19 pandemic, where online learning was a key mode of delivery. Despite their key role in post-16 education, teachers and leadership were only present in 20.3% and 11.9% of the studies, respectively.

Table 4: Focus Area Categories

	Freq.	Percent
Curriculum and pedagogy	41	69.5
Resources and technology	23	39.0
Leadership and organisation	7	11.9
Learner needs, backgrounds and experiences	30	50.8
Teacher needs, supply and development	12	20.3
Total number of categories represented	113	
Total number of studies	59	100.0

A more detailed overview of subject foci and themes can be found in Table 5 below. This further illustrates the prevalence of maths-specific research related to post-16 GCSE resits and of curriculum and learners as areas of interest to researchers.

Table 5: Subject Focus by Topic Area

Subject Focus	Curriculum & pedagogy	Resources & technology	Leadership & organisation	Learner needs, backgrounds & experiences	Teacher needs, supply & development
English	4	2	0	1	2
Maths	29	16	4	21	7
Both	5	4	2	7	2
General/ unclear	3	1	1	1	1
Total	41	23	7	30	12

We also categorised our studies by the primary method employed by the researchers (see Table 6). Over half of the studies were action research projects, and all but two of these were maths-focused (see Table 7). As will be discussed later, many of these were developed with the CfEM, which would account for the maths bias as well as the high proportion of these projects that were completed by FE staff in-house.

Table 6: Primary Research Method

	Freq.	Percent
Action research	30	50.9
Interview/focus group	4	6.8
Literature review	5	8.5
Mixed methods	13	22.0
Randomised controlled trial (RCT)	5	8.5
Survey/questionnaire	2	3.4
Total	59	100.0*

**percentages may not total 100.00 due to rounding*

Table 7: Primary Research Method by Subject Focus

	Primary Research Method						
Subject Focus	Action research	Interviews/ focus groups	Literature review	Mixed methods	RCT	Survey/ questionnaire	Total
English	2	1	0	2	0	0	5
Maths	28	0	0	8	3	1	40
Both	0	3	2	2	2	1	10
General/ unclear	0	0	3	1	0	0	4
Total	30	4	5	13	5	2	59

The relatively small number of RCTs in our database (n=5) also explains in part the overall low evidence security of our database as a whole. As Table 8 highlights, two-thirds of our database was of low security. Nonetheless, the majority of the studies were of high relevance to our review, and they may be informative as to the concerns of practitioners and researchers for both teaching practice and wider outcomes.

Table 8: Relevance by Evidence Security

	Evidence Security				
Relevance	High	Medium	Low	N/A	Total
High	3	10	33	1	47
Medium	0	4	7	1	12
Total	3	14	40	2	59

2.3 Thematic analysis

Below we present the findings from our desk-based review, following the five thematic categories as defined in our Methods section above (2.1.3). Where studies appear under more than one theme, the analysis will be specific to each of those themes, but we indicate that these studies also appear elsewhere using an asterisk (*). In each section we provide:

- a short introduction to the theme
- summaries of the studies, ordered by strength of evidence security (high, medium, low)
- comments on methodology and main results where applicable.

A full compilation of all the studies in our database can be found in Appendix 2.

2.3.1 Curriculum and pedagogy

In this section we examine the literature on curriculum and pedagogical approaches. This includes practices or interventions relating to teaching and learning approaches; curriculum organisation and delivery; and assessment practices (including diagnostic testing of students). In more specific terms, the theme includes studies that explore and evaluate practices such as tutoring, diagnostic testing, contextualised or 'real life' learning, formative assessment, online or flipped learning curricula and mastery approaches.

This theme was the largest across the review, with a total of 41 texts included (see Table 9 below). The majority of these studies were focused on maths (n=29) with just four looking specifically at approaches in English. We have identified one high evidence security study, 11 medium security studies and 28 low security studies. One of the studies (examining the effectiveness of the Maths for Life intervention) does not have a security rating as it is an incomplete randomised controlled study, and as such is not discussed in the analysis below.

Table 9: Curriculum and Pedagogy Texts – Subject Focus and Evidence Security

	Evidence Security				
Subject Focus	High	Medium	Low	N/A	Total
English	0	1	3	0	4
Maths	0	6	22	1	29
Both	1	2	2	0	5
General/unclear	0	2	1	0	3
Total	1	11	28	1	41

High security studies

The single high security study within this theme is an EEF-funded systematic literature review (**Maughan et al., 2016**)*, which examined the evidence on specific interventions (or features of interventions) that may be effective in improving English and maths outcomes for students aged 16–18, and particularly those from disadvantaged backgrounds and who are studying these subjects on GCSE or functional skills programmes. The review presented a detailed overview and synthesis of 33 included articles. While focusing on a similar topic area to the current review, we noted that the work by Maughan et al. (2016) used different and broader

search terms, and thus included studies from a wider range of international contexts, mostly conducted prior to 2010, and with different groups of participants. Some studies, for example, included secondary-age pupils rather than the post-16 GCSE cohort that we have focused on here. We acknowledge that, in relation to our practice review, there may be some 'indirectness' in terms of the evidence provided by Maughan et al. (2016); nevertheless, the study is the most comprehensive and relevant systematic review available in this field at present.

In relation to English, the review suggested that the following features of interventions were found to have a positive impact based on strong evidence from a number of studies:

- peer-mediated support, for example peer tutoring
- sustained support over time
- an approach that includes a number of strategies, including whole-language approaches, linguistics and phonics, rather than relying on one approach.

Three interventions targeted literacy skills across the curriculum but the evidence from these was not robust and the findings were mixed (with some interventions showing no positive gains). The evidence from the interventions suggests that professional development for teachers in the content areas is crucial, and sustained input for the students is generally required.

The maths studies highlighted some positive outcomes for the following approaches taking place in the maths classroom:

- targeted increases in time spent on maths
- realistic contexts
- meaningful classroom discussion.

The authors also found some positive outcomes for diagnostic testing, tutoring and embedding maths into vocational subjects; however, the evidence for these approaches was of variable or weak quality.

The review reiterated the perspective that there is limited robust evidence available in this area, noting that even methodologically stronger studies (such as those employing experimental or quasi-experimental designs) had substantial weaknesses. The authors also found that a number of the included studies were conducted on a small scale and drew on qualitative data. The review predominantly included studies conducted prior to the current policy context of compulsory GCSE maths and English resits for 16- to 18-year-olds. We note, however, that since its publication in 2016, no new high security studies in the area of curriculum and pedagogy have been completed.

Medium security studies

Eleven studies were designated as medium security within this theme. Of these, eight were of high relevance and three were of medium relevance. We describe these below by subject area.

Maths-focused studies

Hanley et al. (2021) set out to investigate the impact of the 5Rs approach to learning maths through a large-scale randomised controlled trial involving 4,486 students and 88 post-16 settings. The intervention provides training for teachers, diagnostic tests and a scheme of work and lesson plans focused around a clear lesson structure. Each 5Rs lesson is structured into five sections:

- Recall (recalling key maths facts)
- Routine (completing practice questions)
- Revise (revising one specific topic)
- Repeat (practising exam questions)
- Ready (focusing on exam technique).

Due to the Covid-19 pandemic, it was not possible to gather externally assessed maths GCSE grades and so it was not possible to evaluate the impact of 5Rs on students' attainment. Data collected from teachers indicated that there were positive perceptions of the intervention and its potential to improve attainment. However, there were concerns about poor attendance at the training sessions. A second 5Rs trial is underway.

Two mixed-methods studies have considered the value of other approaches to curriculum and teaching in maths. **Hough et al. (2017)*** examined the Realistic Mathematics Education (RME) intervention, which 'prioritises the use of context and model-building to engage and motivate students, enabling them to visualise mathematical processes and make sense of what they are doing without resorting to rules and procedures which have no meaning' (Hough et al., 2017, p.5). The study employed a quasi-experimental design (pre/post-test and attitudes) with four pairs of GCSE resit classes and collected data from lesson observations and teacher interviews. The classes were situated across three institutions: two FE colleges and one school sixth form. The original student sample size was 147 but substantial attrition meant that complete data was only collected for 52 students. The study found some improvement in attainment in 'Number' but not 'Algebra'. RME also appeared to have a positive impact on student interaction and discussion.

Noyes and Dalby's (2020)* study of mathematics in FE colleges included in-depth case studies and a teacher survey to explore curriculum offers in different colleges, considering how these curricula affect how maths resit programmes are delivered and teacher/student experiences of them. The study found that teachers' choices of classroom approaches were dependent on a range of contextual, organisational and educational factors. Teachers address a range of challenges within the FE context using a combination of strategies. The most common ones that were deemed effective included:

- developing a contrasting learning experience from that of school
- creating a classroom culture in which students feel included and safe
- building positive relationships with individual students
- pedagogical adaptations to meet the learning needs of individuals and groups.

Teachers reported a need for frequent adaptations to meet the needs of different groups and of individuals within groups. These adaptations aimed to address affective issues, motivations, personal interests, knowledge gaps and vocational connections.

Three action research projects examined different curriculum and pedagogical approaches for maths learners. **Arvind et al. (2021a)*** explored the influence of a 'set curriculum' on students' perceptions relating to motivation, engagement and attainment. 'Focus 4' online resources from the Maths Box website are designed to support students to achieve a Grade 4 in GCSE maths. The resources predominantly use retrieval approaches, based on 'real life' examples, to develop numeracy and fluency skills. A total of 166 learners across four colleges were included in this mixed-methods study. Students generally reported finding the resources helpful and that their motivation improved. Reasons for this included that the resources provided good revision and recap approaches, covered a range of relevant topics, and supported the development of new skills. Teachers were also positive about the potential impact of Maths Box. Considerable attrition, however, meant that only 88 out of 166 students responded to the final questionnaire and there were some concerns raised that the resources were not accessible for students who were likely to achieve below a Grade 4.

Stewart and Dobson's (2021) study looked at the use of 'starter' activities (i.e., short tasks at the beginning of lessons) for reinforcing and improving number skills. The project considered the value of re-teaching and consolidating Key Stage 1 and 2 number skills and concepts via brief, introductory activities in lessons. In total, 80 students from Sport and Art and Design courses were selected to participate in the study. In Art and Design, the students completed starter activities involving 10 questions, with 10 minutes to mark and discuss. The Sport group also completed 10 questions but had up to 30 minutes for marking and discussion. Using marks from these activities and teacher-assessed grades, the authors suggested that those in the Sport group scored consistently higher. This data has not, however, been presented as clearly as it might have been, and closer inspection of the results would be helpful. The authors concluded that careful and in-depth consolidation of basic maths skills is essential for supporting students' further progress in the subject.

A final study in this section **(Arvind et al., 2021b)*** is deemed to be of medium security but also only of medium relevance. It examines the broader issue of the factors that influence engagement with GCSE maths resit programmes, and specifically with online maths provision. Using a pre/post survey and teacher and student interviews, the authors found that the majority of their 100 learners used a range of different online maths resources during the course of the study. Hegarty Maths was the most popular with students. The main reason provided for selecting specific resources was the ease of accessing and navigating them. Students reported distractions at home and a lack of motivation as reasons for not engaging with the online provision.

English-focused studies

The EEF-funded Assess for Success pilot study **(Taylor et al., 2021)** examined the feasibility of a diagnostic and formative assessment approach in English GCSE resit programmes. The aim of the intervention is to provide teachers with detailed, high-quality information about learners' skills and needs in order to facilitate targeted and effective planning and teaching.

The study found some potential promise in terms of students' sense of achievement and self-confidence, and some teachers felt that they were better able to understand students' development priorities. Both teachers and students, however, had concerns about the lack of alignment between the assessments and the requirements of the GCSE examination. The authors determined that further development of the intervention is required before it can be rolled out and further trialled.

Studies focusing on both English and maths

Two studies have looked at issues relating to curriculum and pedagogy for both English and maths resit programmes. **Higton et al. (2017)*** conducted interviews with 45 school/college leaders in order to determine perspectives on the most effective approaches to delivering resit GCSE programmes. In relation to curriculum and pedagogy, they found that the strongest provision included good diagnostic assessment approaches, and that teachers need good information about students' knowledge and skill gaps in order to plan and deliver relevant content. Contextualisation of learning was often viewed as a valuable approach, particularly for supporting students' motivation and engagement. Some colleges developed English and maths lessons relevant to elective courses ('mathematics for plumbers', for example). Most providers tended to use 'levelled' (broad attainment-based) groupings for teaching rather than mixed-ability teaching. This allowed for more targeted approaches, although it was noted that some differentiation was still required. Goal setting was frequently used as an effective way of motivating students, especially for those who were aspiring to higher education.

Runge et al.'s (2019) pilot study explored an intervention designed to support the contextualisation of English and maths by training teachers to use vocational and real-life examples in their classes. The aim was to improve students' motivation and engagement with a view to supporting improved progress and attainment. Key findings from the feasibility pilot found that there was limited increase in the use of contextualised learning in the classrooms, making it difficult to assess whether the intervention could have an impact on retention and attainment. There was support from teachers and leaders for using contextualised learning approaches, but some teachers were concerned about the challenges of applying contextualised knowledge to non-contextualised GCSE examinations. They also noted that students were more likely to respond positively to real-life rather than vocational contextualisation, often due to a lack of interest in their vocational subjects/programmes. The authors concluded that significant changes to the intervention would be needed in order to make it more time effective and to secure wider teacher 'buy in'.

General studies

Two studies focused on more general issues related to curriculum and pedagogy in FE. While designated as 'medium relevance' as they did not specially examine post-16 English and maths resit provision, they offer some insight into the practices and interventions being used with groups of young people engaging with these qualifications. A literature review by **Van Effenterre (2017)*** provides an overview of recent remedial practices and policies in post-16 provision. By 'remediation' the author is referring to 'supplementary courses or interventions designed to improve basic skills for students who failed to achieve the requirements to enter higher education programmes, including supplementary courses for those who did not achieve

a sufficient score, but also peer-support groups, mentoring – face-to-face or with the use of ICT – and financial incentives' (Van Effenterre, 2017, p.1). Focusing primarily on studies using experimental/quasi-experimental designs, the review also included discussion of approaches that have not yet been subject to rigorous evaluation. The evidence suggested that the effects of remedial approaches were very mixed, with variation of impact affected by students' location, institution, personal characteristics and background and level of academic preparedness. Some potential promise for mentoring approaches was reported, finding that face-to-face services cannot be easily replaced with technological approaches (such as text messages). Combined approaches (such as academic support and financial incentives) may also lead to positive outcomes.

Bielby et al. (2012)* carried out a review of the curriculum and qualification needs of young people (aged 16–24) at risk of disengagement (as defined by being not in education, employment or training). The authors concluded that the following were likely to be significant for promoting progress for this group of students:

- encouraging learners to take ownership of decision-making related to their learning
- using flexible approaches to teaching to support engagement and stimulation
- being alert to when learners need extra support (e.g., when they might need catch-up tuition)
- ensuring that all teaching is delivered in a way that interests young people and which foregrounds relevance to life and future careers.

Low security studies

A total of 28 studies were designated as relevant to the 'curriculum and pedagogy' theme and being of low evidence security. Topics included mastery approaches, blended learning, problem-solving approaches and low-stakes testing.

Maths-focused studies

A total of 22 studies from this section focused on maths-related teaching and learning. Of these, 18 were action research projects, supported and facilitated by the CfEM, and carried out during the 2020–21 academic year. They covered a wide range of curricular/pedagogical practices and interventions; due to the Covid-19 pandemic, many of them focused on, involved or were delivered using online approaches. These studies are also included in our subsequent section on 'Resources and technology'.

A number of studies explored the use and value of flipped learning, blended or digital approaches and online learning platforms for maths teaching and learning (**Bilby and Higgitt, 2021*; Bruce et al., 2021b*; Coupland et al., 2021*; Gunduz et al., 2021*; Harrop et al., 2021*; Kimeng et al., 2021*; Lister et al., 2021*; Raman et al., 2021*; Ramsden et al., 2021***). Using small-scale, often mixed-methods, perceptions-focused data, the authors tended to report generally positive experiences and outcomes for young people. However, a number of studies noted very limited engagement with online activities from many students and also highlighted the challenges of access and motivation experienced by some students. Two studies explored assessment approaches. **Cutt (2019)*** found that using low-stakes tests led to a slight reduction in reported anxiety with maths; and teachers reported that students

were more likely to answer questions and ask for help in class. **Wilberforce College (2021)*** sought to understand whether taking a more positive tone with feedback would help with student motivation. Their findings pointed towards the approach being potentially useful, but the study lacked some clarity in its presentation of results, making it more difficult to interpret the key outcomes from the study.

Studies by **Bruce et al. (2021a)*** and **Graham et al. (2021)*** both examined the role of mastery approaches in maths. The former study (Bruce et al., 2021a) found some potentially promising outcomes from the intervention for students' perceptions of their maths confidence and ability. Graham et al. (2021) sought to understand whether mastery approaches could work effectively when delivered via a virtual platform. The study presented some mixed perspectives on this, concluding that while there may be potential to develop this approach if necessary, there were a number of challenges for students and teachers, which arguably made it less valuable than delivery of mastery-based practices in person. In a further study, **Abbas et al. (2021)** found that diagrams can be potentially helpful for supporting students to visualise and work effectively on maths problems.

Some studies focused on pedagogical approaches in maths. **Chatterjee-Woolman et al. (2021)** found that a series of lessons focused on problem-solving led to improved outcomes for in-year assessments but no improvement overall in the final examination. **Rahman et al. (2021)** explored approaches for teaching key maths-related vocabulary, phrases and definitions, with a view to supporting learners with English as a second or additional language. Following pre/post tests, the authors reported positive attainment outcomes for this group of learners. **Northampton and Harlow College (2021)*** examined the effect of small-group interventions through Maths Clinics and Maths Labs. While hampered by the Covid-19 pandemic, the action research project found positive perceptions from staff and the relatively low number of students who completed the study survey.

A project by **Fremlin et al. (2021)*** looked at how outdoor learning and learning beyond the classroom might help students' motivation and engagement. Activities such as orienteering, food production, a murder-mystery session and engaging with sports such as running were used to facilitate a range of maths-focused learning opportunities. From the 67 participating students, the majority enjoyed these approaches and felt that they had positively benefited their maths progress. **Naughton et al. (2021)*** ran a pilot study which looked to raise aspirations relating to higher education attendance through team-based learning in maths. Again, students reported finding this approach helpful and enjoyable. To support with tackling maths anxiety, **Johnston-Wilder et al. (2015)*** developed a short course to teach learners about mathematical resilience. While very small-scale, participants reported that they benefited through the approaches to self-coaching and techniques designed to improve their engagement and attainment in the subject.

Finally, two studies considered some of the broader policy and practice issues relating to post-16 maths provision. **Smith and Dalby (2021)*** presented interim findings from a mixed-methods study, which included policy mapping, a literature review, a teacher survey and college case studies. In relation to curriculum, they found the GCSE programme being prioritised over functional skills and reiterated that contextualisation is generally viewed as more relevant and interesting to students. In a further study from the same overall project,

Dalby and Noyes (2022) returned to the issue of GCSE and functional skills programmes of study, finding that functional skills curricula were often perceived as more suitable and beneficial for vocational students (by teachers and students) yet were often overlooked in favour of the GCSE, which is required for access to higher education and some forms of employment.

English-focused studies

Three studies focused on different areas of curriculum and pedagogy for English. None of these included attainment or academic outcome data. **Lloyd (2021)*** explored the experiences of English GCSE resit students on vocational courses. The study found that participants were aware of important differences between the skills represented by the GCSE and the skills that they valued, enjoyed and considered that they needed. They had higher regard for the skills developed through their vocational programme.

An **ETF (2020)*** study examined the use of reading booklets to support the teaching of one element of the GCSE qualification: engagement with unseen texts. The study found positive perceptions from staff and students and an unintended consequence of reduced lesson preparation time for teachers. A final action research study by **Akyali (2019)** – of medium relevance – looked at peer assessment in the English classroom. Based on just four learners, the study reported that students felt positive about this approach and allowed them to improve and develop their own work.

Both English and maths studies

Eardley et al. (2018)* examined the potential for an employer-sponsored curriculum to improve students' motivation in English and maths resits. Using questionnaires with a small sample of students, the authors found that students in the intervention group did report improved levels of motivation, although they did not have confidence that GCSEs in English and maths would help them to secure work.

Ireland's (2019)* brief review of literature foregrounds some key strategies for supporting and improving pedagogy and curriculum for GCSE resit classes. High-quality diagnostic assessment is presented as an important approach. A number of classroom approaches which have been described in studies above (e.g., Maughan et al., 2016; Higton et al., 2017) are also included. Contextualisation of learning (i.e., in 'real world' or vocational contexts) is noted as having potential for student engagement and progress.

General studies

A final medium-relevance study **(Ofsted, 2022)*** reviewed the roll-out of 16–19 tutoring in colleges after the Covid-19 pandemic. While not only used for GCSE resits, there was an opportunity for colleges to utilise the tutoring budget for the students working towards these qualifications. Drawing upon information from 21 site visits, Ofsted found that high-quality tutoring was well-aligned with vocational learning, but in some cases this collaboration was not always happening. In weaker cases, tuition was generic and not always addressing the specific needs of the students. Good diagnostic assessments are needed throughout to understand where the 'gaps' are and where they have been closed.

2.3.2 Resources and technology

In this section we examine the literature relating to resources and technology. This includes:

- the use of specific teaching and learning resources or materials
- technology designed to aid or support teaching and learning (e.g., virtual learning spaces, educational apps)
- technology-led practices.

Readers will find that there is some overlap with the section above ('Curriculum and Pedagogy') due to many of the pieces reporting on approaches that intersect across the two themes. These studies are reported here too, with specific focus on the resources/technology. The use of technology for supporting and facilitating learning in GCSE resits has grown considerably in recent years. Part of this was due to the necessity of online learning approaches during the Covid-19 pandemic; but in addition to this, there has been increased interest in understanding the potential for technology to promote engagement, motivation and progress for post-16 learners. We believe it is important that readers are provided with an overview of the current literature in this space in order to aid decision-making around potentially promising approaches and areas where further research may be required.

Within this category, recurring approaches included:

- online lessons and virtual learning spaces
- flipped learning or blended learning
- the use of apps and mobile phones.

Many of the included studies were conducted during the Covid-19 period and some have been included in this section because of a shift to online provision and adaptation.

This theme includes a total of 23 texts (see Table 10 below). As above, the majority of these studies (n=16 were focused on maths, with just two on English, four across both maths and English, and one in the general category. We identified three high evidence security studies (each looking at both maths and English resits), four medium security studies and 16 low security studies. We have included an asterisk (*) next to citations of pieces that have already been described above.

Table 10: Resources and Technology Texts – Subject Focus and Evidence Security

	Evidence Security			
Subject Focus	High	Medium	Low	Total
English	0	0	2	2
Maths	0	3	13	16
Both	3	0	1	4
General/unclear	0	1	0	1
Total	3	4	16	23

High security studies

Three high security studies were identified within the resources and technology category. Each of these formed parts of studies that were focusing on both English and maths outcomes for

post-16 GCSE resit learners. The first of the studies was the systematic review carried out by **Maughan et al. (2016)*** also described in the section above. In relation to technology, there was only evidence identified in relation to learning and progression in maths. The review found some support for the use of technology to both motivate students and to develop their skills more effectively. Careful use of technology was identified as a potentially promising element of high-quality maths provision for this cohort. The authors noted that technology can provide a means of delivering content in a more embedded and personalised way, and may also be a useful tool for supporting the administration of initial diagnostic and ongoing assessments. Despite this, there is still limited direct and causal evidence relating to specific uses of technology or interventions involving technology in post-16 resit settings.

Two studies that did engage with technology use for resit learners both examined the impact of text messaging on maths and English attainment. **Groot (2018)*** used an experimental approach to understand the effect of sending weekly supportive and actionable text messages to learners' study supporters (i.e., family members or friends). The study included nine colleges and 1,706 students, with 838 allocated to the intervention group and 868 to the control group. The texts included a range of information about course content or class materials, reminders about upcoming exams or assessments, prompts for questions or discussions with the learner, and details of academic resources available to the learner. Attendance and attainment data (GCSE resit outcomes) were used as measures. The study revealed some positive results, with those in the intervention group more likely to attend classes (ES=0.11) and more likely to achieve a Grade C (equivalent to a current Grade 4) in their GCSE resits (ES=0.11).

In-depth interviews with participating tutors and students also highlighted some of the conditions that potentially contributed to effective implementation of and engagement with the intervention, including committed leadership, teacher training and support, and access to relevant resources. For students, issues of learner identity and students' experiences of support were also deemed important. In a follow-up field experiment (named Project Success), the same author (Groot, 2018) increased the number of intervention arms to also include texts to learners and texts to both learners and study supporters. Again, weekly texts were sent to the study supporter group, the learner group and the learner *and* study supporter group. In summary, the supportive communication intervention had no significant average treatment effect on class attendance. For attainment, only the learner *and* study supporter arm showed a positive, statistically significant effect (ES=0.09).

An EEF-funded trial of Project Success was completed two years later **(Scandone et al., 2020)***. The evaluation included 3,779 students across 31 FE colleges in England. The efficacy trial used a four-armed, multi-site, randomised controlled design, with individual random assignment to each trial arm. The four trial arms were: student received text messages; study supporter received text messages; both student and study supporter received text messages; and control group (no text messages). The study found no evidence that the Project Success intervention had any impact on the GCSE English or maths resit pass rate for participating students. Nor was there any evidence for impact on attendance. The intervention did not have a differential impact on the GCSE resit pass rate by gender or by eligibility for free school meals (at the end of Key Stage 4). While the process evaluation found

that the use of mobile phone technology was appropriate, effective and low risk for this student cohort, there were significant limitations with engaging those students who may most need support (i.e., those with low motivation for study or at risk of disengagement). Participating students in this trial were more engaged and more likely to sign up for the intervention.

Medium security studies

Four studies in this theme were categorised as of medium evidence security. Three of these focused on maths and one focused on more general issues for post-16 learners. All are previously featured in the 'Curriculum and Pedagogy' section above (2.3.1).

Maths-focused studies

Two of the maths-focused texts have been discussed in some detail in the 'Curriculum and Pedagogy' section above. **Hough et al.'s (2017)*** investigation of the Realistic Mathematics Education (RME) intervention is included in this section due to the specific application of RME theory to the design and use of teaching materials and resources. The use of 'realisable' contexts and visual models is a significant element of the approach. As noted above, the evaluation found some positive effects on attainment in Number but not in Algebra, and substantial differences in how the intervention group tackled mathematical problems compared with the control group. Attrition meant that complete data was only available for 52 out of 147 participants, making it difficult to draw more robust conclusions about efficacy.

Arvind et al. (2021a)* explored the influence of a 'set curriculum' on students' perceptions relating to motivation, engagement and attainment. 'Focus 4' online resources from the Maths Box website are designed to support students to achieve a Grade 4 in GCSE maths. The resources predominantly use retrieval approaches, based on 'real life' examples, to develop numeracy and fluency skills. A total of 166 learners across four colleges were included in this mixed-methods study. Students generally reported finding the resources helpful and that their motivation improved. Reasons for this included that the resources provided good revision and recap approaches, covered a range of relevant topics, and supported the development of new skills. Teachers were also positive about the potential impact of Maths Box. Considerable attrition, however, meant that only 88 out of 166 students responded to the final questionnaire and there were some concerns raised that the resources were not accessible for students who were likely to achieve below a Grade 4.

A second study by **Arvind and colleagues (2021b)*** examined the broader factors influencing engagement with GCSE maths resit programmes, and specifically with online maths provision. Using a pre/post survey and teacher and student interviews, the authors found that the majority of their 100 learners used a range of different online maths resources during the course of the study. Hegarty Maths was the most popular with students. The main reason provided for selecting specific resources was the ease of accessing and navigating them. Students reported distractions at home and a lack of motivation as reasons for not engaging with the online provision.

General studies

The literature review by **Van Effenterre (2017)*** provides an overview of recent remedial practices and policies in post-16 provision. As we note above, the author found some positive effects for mentoring approaches but noted that face-to-face services appeared to be better

received than those that used low-cost technology approaches, such as mobile apps. Studies that evaluate mentoring approaches have found evidence of positive effects and interestingly find that face-to-face services cannot easily be replaced by low-cost technology such as text messages. The author found that an in-person coaching intervention was more effective than texting, highlighting the significance of relationships and conversations between staff and students for stimulating motivation and progress. As with the **Maughan et al. (2016)*** study, Van Effenterre found some correlational support for using innovative IT-related pedagogies in the post-16 classroom, although further, more robust research is needed to adequately test these interventions.

Low security studies

A total of 16 low security studies were identified as part of the Resources and Technology theme. Of these, 13 were focused on maths, two on English and one on both subjects. The majority of studies in this section (n=13) also featured in the 'Curriculum and Pedagogy' section above (2.3.1). We note the resources/technology-specific elements in our descriptions below.

Maths-focused studies

As we found in the section above, a number of the studies in this section set out to explore the value of teaching GCSE maths content via a flipped, blended learning approach (**Bilby and Higgitt, 2021*; Bruce et al., 2021b; Coupland et al., 2021*; Harrop et al., 2021*; Kimeng et al., 2021*; Lethbridge et al., 2021*; Raman et al., 2021***; **Ramsden et al., 2021***). Some of the authors reported that this was associated with trying to find new, innovative ways to deliver the maths curriculum, while for others it was also a necessity due to the shift to online learning as a result of the Covid-19 pandemic. This context is important to have in mind when considering both the implementation and the evaluation of the approaches described here. **Bilby and Higgitt (2021)*** reported mixed engagement with flipped learning and acknowledged that it did not suit all learners. They suggested that a more flexible model (including additional face-to-face or online support) is needed to ensure that all learners' needs are adequately met. The study by **Coupland et al. (2021)*** reported some positive findings. Small average increases were reported in relation to students' confidence in maths (as with a similar project by **Ramsden et al., 2021***) and computer use following engagement with the blended approach, although it was difficult to attribute these improvements solely to the use of blended learning. Both **Bruce et al. (2021b)** and **Harrop et al.'s (2021)** studies revealed that the majority of students reported preferring face-to-face teaching rather than the online or blended approaches being trialled.

While **Bruce et al. (2021b**) found some positive outcomes from their online growth mindset approach, the authors raised concerns that the intervention did not adequately support all learners to the extent that they needed. Similarly, **Lethbridge et al. (2021)*** noted the varied experiences that some students had of online learning approaches, with some struggling to access the technology and missing the face-to-face teacher support and peer interaction that they otherwise would have had. More positively, some students enjoyed greater independence with their learning and the ability to receive private, online feedback. This coincides with some of the findings by **Raman et al. (2021)*** who noted that many students saw benefits to the online approaches used during the pandemic; however, they found no

evidence of an association between engagement with the online resources and academic performance.

Kimeng et al. (2021)* found that some students appreciated the immediate feedback that they received from the Blutick online maths teaching platform; there were some significant issues with student engagement and attendance, however, which affected the extent to which the authors could draw strong conclusions about the value of the approach. A study by **Cottam et al. (2021)*** sought to improve students' engagement via the use of social media. However, their findings showed that the majority of students were not happy with the idea of teachers using and promoting maths via social media platforms, and that they predominantly only used these sites for social and leisure, rather than academic, purposes.

Graham et al. (2021)* demonstrated that there were a variety of strengths and limitations to using online approaches for teaching ratio. They found that there were lots of valuable tools available to support with teaching; however, they noted that the students found it difficult to transfer skills from traditional pen and paper to online software. Echoing some of the other findings above, there were also concerns from students about the lack of face-to-face contact and mixed accessibility and capabilities with using the IT and software platforms (an issue also raised in **Gunduz et al.'s (2021)*** study examining the delivery and use of virtual manipulatives via mobile phone apps).

Hopker et al. (2021)* examined teachers' use and confidence with technology, focusing on the use of Century Tech, Desmos, Padlet and Whiteboard.fi platforms to support their teaching and learning. Following a number of CPD sessions and reflection activities, teachers reported increased confidence in their use of the platforms for teaching GCSE maths. In a further teacher-focused study **(Lister et al., 2021)***, the authors noted that there can be a tendency to 'replace' classroom teaching rather than 'remodelling' it for online contexts. They argued for whole-college professional development approaches that can address this and allow teachers time and space to develop their skills in this area.

English-focused studies

In a recent study, **Begum (2021)*** examined how English teachers can use mobile phones as a way to create an interactive and motivational learning environment. Using interview and focus group data, the author reported that lecturers used two online applications (apps) to support recap and knowledge recall activities, as well as providing feedback digitally. The project began in the classroom but was altered following the shift to online learning due to the pandemic. While the lecturers suggested that there were some positives to using mobile phones, they also reported that it took a lot of time to learn how to use the apps efficiently and effectively, and that this needed to be part of a process of longer-term professional development.

The other study in this section is by the **ETF (2020)*** and explored the use of reading booklets to support the teaching of one element of the GCSE qualification: engagement with unseen texts. The study found positive perceptions from staff and students, and an unintended consequence of reduced lesson preparation time for teachers.

Studies focusing on both English and maths

The brief review by **Ireland (2019)*** noted that there was some evidence for effective use of technology in relation to maths delivery but not for English. As we have seen in some of the other studies above, the author noted the increased use of different forms of online learning, including social media, apps, smartphone use and digital feedback. However, an in-depth examination of the evidence for these approaches was beyond the scope of this particular study.

2.3.3 Learner needs

We defined learner needs, backgrounds and experiences as including learner characteristics (for example, special educational needs and disabilities (SEND) or English as an Additional Language (EAL) status), preferences in learning, and issues around engagement and motivation (including aspirations, attendance and resilience). This theme was present in around half of the studies in our database. As with the other themes, evidence focused on maths or of lower security was more prevalent (see Table 11); many of these studies were of small scale or based on teacher or student perceptions, which lowered the security of the evidence. Some studies also made reference to other themes, such as the use of technology, coaching for students and meeting student needs via particular pedagogical strategies.

Table 11: Subject Focus by Evidence Security – Learner Needs, Backgrounds and Experiences

	Evidence Security				
Subject Focus	High	Medium	Low	N/A	Total
English	0	0	1	0	1
Maths	0	4	16	1	21
Both	2	1	4	0	7
General/unclear	0	1	0	0	1
Total	2	6	21	1	30

High security studies

There were two studies of high security, both of which were randomised controlled trials using text messaging as a means of student support. The recipients of these text messages did differ: **Groot (2018)*** evaluated text messages sent to students' support circles of families and friends, whereas **Scandone et al. (2020)*** trialled texts to students themselves. The impact of these interventions also differed: while Groot (2018)* found that attendance and attainment in maths and English did improve, even more so when students also received text messages, Scandone et al. (2020)* found no evidence of impact on attainment.

Medium security studies

We examined six medium security studies, which explored topics including motivation, engagement, confidence, attitudes and attendance.

Maths-focused studies

As with most studies under this theme, teachers and staff participating in **Noyes and Dalby's (2020)*** study supported the idea that students' backgrounds, prior experiences, attitudes and aspirations influence success in GCSE resits. Furthermore, the authors purported that

contextual factors such as prior low attainment and perceptions of 'failure', variation in admission requirements and an unpopular compulsory mathematics policy can mean teachers need to adapt their teaching to meet the diverse challenges and needs of students.

Two of the maths-focused medium security studies evaluated the use of specific schemes of work or resources to improve the motivation and engagement of resit students **(Arvind et al., 2021a*; Arvind et al., 2021b*)**. Both studies were self-identified as action research projects and affiliated with the CfEM. Teachers identified that access to appropriate equipment and technology for students was an issue, and students reported that distractions at home and low motivation were also a barrier to learning. The Covid-19 pandemic influenced both studies, meaning there was a focus on online learning scenarios, which is reflected in the findings. Moreover, attrition was high, and findings should be treated with caution.

In another Covid-affected study, **Sharp (2021)** evaluated a coaching intervention for improving confidence in and perceptions of maths. There were some positive findings that confidence in and perceptions of maths had improved, and that face-to-face coaching was viewed more favourably than online coaching, although it should be noted that the pandemic impacted participation in the intervention.

Studies focusing on both English and maths

In a study focusing on both English and maths, data from interviews with 45 sixth-form and FE leaders suggested that more positive approaches to improving attendance and attitudes were needed **(Higton et al., 2015)***. In particular, leaders identified that greater support was needed for some groups, including EAL students and those who lived in rural areas.

General studies

Bielby's (2012)* review of strategies to support young people at risk of becoming NEET (not in education, employment or training) did not overtly mention GCSE resits, but it did have some findings of interest. Bielby summarised that a supportive environment and student ownership in decision-making were important for these students.

Low security studies

Over two-thirds of the studies in our database related to this theme were of low security. However, as many of them were small-scale action research projects conducted by practitioners in their own institutions, these highly relevant studies still help us to understand key concerns related to learners and current practices, which teachers think might benefit students' wider outcomes.

Maths-focused studies

Sixteen of these low security studies were focused on maths, and authors generally reported positive findings on a range of topics and outcomes, including developing resilience, vocabulary for EAL students, team-based learning and aspirations. Fourteen of these studies were action research projects, and 13 were affiliated with the CfEM.

One of the larger studies was **Bruce et al. (2021a)***, which suggested some potentially positive findings around the impact of maths mastery on student confidence. This study included 400 students; however, there was no control group and the research was impacted by Covid, which

makes it harder to draw conclusions. **Bruce et al. (2021b)*** also conducted a slightly smaller project with the aim of developing technological solutions to support learning and a growth mindset. Some students had issues accessing the technology or a suitable learning environment at home, and the current model evaluated here was found to need further development if it was to achieve its aims around learning and students' mindset. Likewise, the findings of a pilot study of team-based learning as a strategy to raise aspirations were also potentially positive, but the intervention needed substantial further development **(Naughton et al., 2021)***.

Lethbridge's (2021)* action research project on blended learning found that some students struggled in accessing appropriate technology or learning environments and many commented on the lack of face-to-face teacher and peer support, although other students valued the independence of this mode of learning. **Raman et al. (2021)*** also focused on technology-based delivery of teaching. This study was quite exploratory, meaning limited conclusions could be drawn, but there were some specific practices for which students demonstrated a preference, such as using Microsoft Teams as a platform and the chat function for engagement.

Eight further studies affiliated with the CfEM **(Fremlin et al., 2021*; Cottam et al., 2021*; Wilberforce College, 2021*; Ozanne et al., 2021*; Gunduz et al., 2021a*; Savage and Norris, 2021; Northampton College and Harlow College, 2021)** explored students' engagement and motivation. The first three studies focused on relocating lessons outside the classroom (Fremlin et al., 2021), social media (Cottam et al., 2021) and formative feedback (Wilberforce College, 2021). The latter four studies focused on coaching/mentors and Maths Labs/Clinics **(Ozanne et al., 2021*; Gunduz et al., 2021a*; Savage and Norris, 2021; Northampton College and Harlow College, 2021)**. Most of these studies reported an improvement in student confidence, although Covid and timetabling were barriers during these studies and they were heavily reliant on student reflections. Unlike the positive findings in the other studies and despite the authors' claims, it was unclear in **Cottam et al.'s (2021)** action research project whether social media was an effective method of improving the engagement of maths resit students; there was no obvious preference or preferred platform, but this could still be a potential topic of interest to educators and researchers in future.

Hanlon and Wheeler (2021) reported potentially positive findings of a mindfulness intervention on student anxiety. **Cutt's (2019)*** action research project explored the use of low-stakes testing in the classroom and found that this did improve exam anxiety, although it was harder to infer whether it helped students' confidence. An impact study of a course by **Johnston-Wilder et al. (2015)*** found positive benefits in students' resilience and learning; it should be noted that this was a small-scale study of a programme that had been developed and delivered by the authors. **Rahman et al. (2021)*** found some benefits to EAL students of explicit teaching of maths vocabulary, although the EAL students in this sample were already higher attaining than their non-EAL counterparts.

English-focused studies

We found one low security study which detailed the experiences of individual students resitting GCSE English **(Lloyd, 2021)***. Participants valued vocational work skills more highly, which

influenced their own definition of what 'success' meant to them. There were interesting differences between the skills required in the GCSE syllabus and the skills that students valued and believed they needed.

Studies focusing on both English and maths

There were four studies which discussed challenges for both maths and English resit students, all of which included engagement, motivation and support for students **(Anderson and Peart, 2016; Eardley et al., 2018*; Ireland, 2019*; Robey and Jones, 2015)**. **Eardley et al. (2018)** found that an employer-sponsored curriculum improved motivation. Well-managed behaviour, supportive learning environments and good student–teacher relationships were all important to students **(Anderson and Peart, 2016; Robey and Jones, 2015)**, as well as high-quality teaching and smaller class sizes **(Robey and Jones, 2015)**. Access to support, particularly peer support, was also considered important to students **(Anderson and Peart, 2016; Ireland, 2019*; Robey and Jones, 2015). Ireland's (2019)*** literature review also suggested that attitudes were a significant challenge in teaching resit students. It should be noted that most of these studies were of small scale, and teachers selected students for focus groups in the Robey and Jones (2015) study, which could have influenced the findings.

2.3.4 Teacher needs

Key ideas for this theme included teachers' expertise/skills, continuing professional development and teacher supply issues. We found that around one-fifth of our database studies included such approaches or interventions. Table 12 indicates the subject focus and evidence security of these. None of the studies were of high security; many of them were either small-scale action research projects or non-systematic reviews, which, while highly relevant and indicative of areas of practitioners' interests, affected security ratings. Two of the studies were also adapted from their original protocols due to the Covid-19 pandemic. Those studies we included under this theme also linked to other areas, including: the curriculum offer; leadership and organisation; and providing effective teaching and support for students according to their needs.

Table 12: Subject Focus by Evidence Security – Teacher Needs, Supply and Development

	Evidence Security			
Subject Focus	High	Medium	Low	Total
English	0	1	1	2
Maths	0	1	6	7
Both	0	1	1	2
General/unclear	0	1	0	1
Total	0	4	8	12

High security studies

There were no high security studies for this theme in our database.

Medium security studies

Maths-focused studies

Noyes and Dalby's (2020)* mixed-methods analysis of policy and practice in FE colleges highlighted issues regarding the recruitment and training of the teaching workforce. Nationally, there is a shortage of teachers in maths, and some colleges reported that current staffing levels were unsustainable. Teachers who are recruited have a variety of backgrounds and qualifications, which in turn means a diverse range of training needs, particularly to develop skills needed to teach students with prior low attainment. Teachers reported that the training they were receiving was often generic and that they would benefit from subject-specific CPD. While this study is limited in terms of the causal conclusions that can be drawn, it does point to some pertinent concerns regarding the recruitment and development of the teaching workforce. Including a range of providers as part of the data collection and the triangulation of data have also strengthened the findings.

English-focused studies

As with previous themes, there was less evidence for English, but **Taylor et al.'s (2019)*** pilot study of Assess for Success, a diagnostic and formative assessment approach, discussed teacher development in this subject. As part of the intervention, training was offered to English teachers. While teachers did report a positive impression of the intervention, results from surveys also indicated that the CPD provided needed further development and that teachers felt that they had little support in addressing those areas that the assessment highlighted. As aforementioned in the 'Curriculum and Pedagogy' section (2.3.1), this pilot study did indicate promise in the intervention but that at present further development was needed before a larger-scale trial.

Studies focusing on both English and maths

In their consultation of stakeholders of current practice in teaching English and maths at post-16, **CUREE (2014)** identified some key issues around teacher development. The study suggested that teachers' subject expertise was a way to improve student attainment, but CUREE found that under half of maths and English teachers had a qualification above Level 3. As with **Noyes and Dalby (2020)**, subject-specific specialist CPD programmes were considered to have the most impact and be most useful to practitioners, as well as collaborative planning and observations with feedback. Leaders were less confident about teachers' capabilities than the teachers themselves.

General studies

As with **Noyes and Dalby (2020**), the **ETF's (2022)** study of the FE teacher workforce remarked that some colleges were reporting difficulties in filling teaching vacancies, with a particular demand for maths and English. The ETF analysis found that seven in 10 advertised vacancies were for permanent posts, and that just over half of available posts were full time. Additionally, the need for teaching qualifications was ambiguous, but the average age of FE-based trainee teachers was higher than for trainees in schools.

Low security studies

We found eight low security studies related to teacher needs and development, focusing on key ideas around teacher CPD, coaching and mentoring, collaborative planning and staffing needs.

Maths-focused studies

Three studies reported positive findings on the effects of teacher CPD **(Johnston-Wilder et al., 2017; Hopker et al., 2021*; Lancaster, 2021)**. The first study reported findings from a small-scale project evaluating the development of a four-day training course, designed to support maths teachers with promoting resilience for teachers and students. Perceptions from participants were positive. The action research project by **Hopker et al. (2021)** examined opportunities for teacher development with using technology, finding that dedicated time and collaboration between teachers were helpful. Finally, **Lancaster (2021)** found that the introduction of increased opportunity for collaboration and shared planning was helpful for promoting a sense of shared teacher efficacy and maintaining teachers' enthusiasm for teaching.

Moreover, **Smith and Dalby (2021)*** discussed the impact of staffing levels on teaching and learning and on the impact of teacher CPD. They suggested that a lack of planning when introducing policies related to GCSE resits contributed to a shortage of high-quality teachers and high staff turnover; Smith and Dalby believe this impacted colleges' ability to make longer-term improvements to teaching and planned professional development opportunities.

Two further action research studies published with the CfEM assessed the success of additional coaching and using maths specialists as mentors in improving student motivation and engagement **(Gunduz et al., 2021; Ozanne et al., 2021*)**. These studies reported a positive impact of such deployment of staff on attainment and student confidence, although Gunduz et al.'s intervention focused only on those who had attained Grade 3 previously and who were therefore closest to meeting the Grade 4 'pass'.

English-focused studies

In an evaluation of the use of mobile phone apps for feedback, some teachers reported during weekly Teams meetings that they needed more training and time to learn how to use this technology **(Begum, 2021)***. This study was severely impacted by the Covid-19 pandemic, with teaching moving from the classroom to online learning.

2.3.5 Leadership and organisation

Under this theme, we examined literature related to the leadership and management of GCSE resits in post-16 settings, including any references to how delivery of the resits is organised, strategic development and oversight, and other concerns such as funding. This theme had the lowest number of references in our database, but those we found were highly relevant to our overall project. Key considerations in the literature included:

- teaching and leadership responsibilities
- strategic planning
- collaborative working
- staffing recruitment and staffing structures.

As with other themes, more evidence was for maths and of low or medium security (see Table 13). While we did find one randomised controlled trial that is ongoing, other studies included non-systematic literature reviews and interviews.

Table 13: Subject Focus by Evidence Security – Leadership and Organisation

	Evidence Security				
Subject Focus	High	Medium	Low	N/A	Total
English	0	0	0	0	0
Maths	0	1	2	1	4
Both	0	2	0	0	2
General/unclear	0	0	1	0	1
Total	0	3	3	1	7

High security studies

There were no high security studies under this theme. However, it should be noted that the ongoing NatCen/EEF trial of the Basic Maths Premium is related to funding and therefore relevant to this theme **(NatCen/EEF, 2021)***.

Medium security studies

Maths-focused studies

Noyes and Dalby's (2020)* analysis of policy and practice in FE described the leadership and management of maths as a whole-college responsibility. They mentioned the importance of maths and vocational staff working together with joint responsibility, and that colleges included as case studies had a variety of staffing structures for maths, each with advantages and disadvantages. The analysis also discussed the practicalities involved for GCSE resit students. This includes college-specific decisions such as timetabling, classroom locations (especially for multi-site colleges), student numbers and funding. All of these decisions will impact the curriculum offer and attainment.

Studies focusing on both English and maths

In an analysis of effective practice in the delivery of GCSE resits, **Higton et al. (2017)*** conducted a number of interviews with FE and sixth-form college leaders. They encourage longer-term strategic planning as a way to improve responses to any policy changes. Another key conclusion was the need for other departments to value English and maths resits; where this was the case, attainment in resits was higher. Staffing structures were also important. Leaders preferred to deploy experienced teachers with suitable qualifications to resit students, but this can be a challenge due to funding and the availability of staff locally. Staff reported several methods to improve recruitment, such as retraining teachers or providing financial incentives to join or remain in FE contexts. Some colleges chose to use a centralised system with students from other departments required to come together in English and maths classrooms, whereas others deployed specialist teachers in curriculum areas; both strategies had advantages and disadvantages. The timetabling of lessons was also an important consideration and differed between providers, although resit subject lessons in the middle of the day had favourable outcomes on attendance.

Participants in **CUREE's (2014)*** strategic review of current practice believed that building workforce capacity and capability was needed, for both strategic and operational purposes. Moreover, leaders at all levels working together was reported to be important.

Low security studies

Maths-focused studies

Two maths-focused studies were related to the positive impact of collaborative planning and creating a teaching and learning community, as well as staffing levels, on teaching and learning **(Lancaster, 2021*; Smith and Dalby, 2021*)**.

General studies

Ofsted's (2022)* recent independent review of tutoring in the post-16 sector had medium relevance to our project and low security findings, but some interesting points to note, particularly as tutoring is linked to some current funding streams related to GCSE resits. In the most effective provision, numeracy skills were developed as part of all post-16 vocational training as a matter of course and not as an option. However, Ofsted highlighted that some colleges do not have a strategy for promoting numeracy, and there were also issues around in-house assessment, with limited diagnostic approaches or lack of numeracy assessments.

3. Fieldwork

3.1 Methods

For the fieldwork strands of the review, the team worked with our established networks in the post-16 sector, engaging with FE and sixth-form colleges to collect and collate data that could provide substantive insights on the state of this field, including capturing the experiences and perspectives of leaders, teachers/lecturers and students involved with post-16 study. The practice review also considered the nature of the transition between school and post-16 education for the students involved, as transition factors may be relevant for understanding GCSE resit attainment (Lupton et al., 2021).

To this end, the fieldwork activity informing the conclusions of this review consisted of two key strands of data-collection: a series of leader and practitioner interviews; and a series of focus groups with current and recent resit students.

3.1.1 Interviews

We conducted 20 hour-long interviews with representatives from various post-16-facing providers (consisting of FE and sixth-form colleges, plus sector representation and development and networking organisations), broken down into four sub-groups of five interviewees each. The sub-groups were:

- sector leaders working for organisations whose role transcends multiple providers in the post-16 sector
- senior leaders (i.e., principals/headteachers) of post-16 settings
- middle and subject leaders with a specific role in overseeing the teaching of students studying for resits

- classroom practitioners with a dedicated responsibility to teach students studying for resits.

Interviewees were identified through discussions with the EEF, ensuring a good range of distinctive organisations, and were approached through email. Interviewees from the first three groups were identified and approached via the professional networks of the research team, supplemented by suggestions from interviewees from the sector leadership group, public recruitment drives conducted by the review team over Twitter and promotion at events organised by sector leaders.

The inclusion criteria for providers to be approached were that they:

- are working in an organisation that focuses on post-16 provision (i.e., FE and sixth-form colleges) – *NB: other forms of post-16 provider, such as University Technical Colleges, were considered, but were not approached due to failing to meet other inclusion criteria*
- are achieving higher-than-average results (either nationally or for their local authority area) for their GCSE resits, as determined by checking the DfE's School and College Performance Data site
- represent a broad geographical spread across the regions of England, to ensure (a) that London and the South East were not overrepresented in the sample and (b) that the review acknowledged and explored varying challenges providers face, related to factors such as the demographics of student intake, regional economic disparities, and the accessibility of development resources for providers.

The fieldwork team conducted the interviews using questions designed specifically for this project. The questions were designed on the basis of a combination of:

- preliminary findings derived from literature identified by the desk review team as being comparatively high-quality and directly relevant to the core purpose of the practice review (Anderson and Peart, 2016; Higton et al., 2017; Maughan et al., 2016; Porter, 2015)
- findings from wider research on effective education practitioner development (Cordingley et al., 2020).

Interview questions are included in Appendix 3.

Descriptive information regarding interviewees' contexts

The following is a description of anonymised information outlining the working contexts of participants in the interview process:

Sector leaders:

- **Interviewee A** is the chief executive of a sector support body which aims to support improved learner outcomes across the FE sector.
- **Interviewee B** is the chief executive of a representative body for post-16 education providers.

- **Interviewee C** is a director-level colleague working on policy at a representative body for post-16 education providers.
- **Interviewee D** is a senior policy specialist at a representative body for post-16 education providers.
- **Interviewee E** is a specialist expert for a major provider of post-16 education support and resources.

Senior leaders:

- **Interviewee F** is a senior leader at a Local Enterprise Partnership, with expertise in post-16 education provision and leadership, based in an affluent region of South-East England outside London.
- **Interviewee G** is a director-level senior leader at a smaller-than-average post-16 education provider in a coastal setting in the South East of England.
- **Interviewee H** is an associate principal at a comparatively large post-16 education provider in the North West of England, serving an urban population with a high percentage of learners of South Asian heritage, many with English as an Additional Language.
- **Interviewee I** is the principal at a medium-sized post-16 education provider in the South East of England, serving a population with a high proportion of looked-after children and care leavers, in one of the most deprived wards in the UK.
- **Interviewee J** is the principal of a large post-16 education provider in a large town in the East Midlands, serving learners from rural and urban communities, and with a relatively high proportion of learners from households eligible for free school meals.

Departmental leaders:

- **Interviewee K** is a Head of Maths at a very large post-16 education provider in the East Midlands, serving a largely urban population – students at this provider are less likely than the national and regional average to leave school with high attainment at GCSE.
- **Interviewee L** is a Head of Maths at a comparatively small post-16 education provider in the West Midlands, serving learners from an urban background with a high level of ethnic diversity and in an area with high levels of socioeconomic deprivation.
- **Interviewee M** is a Curriculum Director for a comparatively small post-16 education provider in London, which focuses on vocational education and serves a population with a high degree of ethnic diversity and a high proportion of households eligible for free school meals.
- **Interviewee N** is a senior maths leader at a faith school in London, serving a population with a high degree of ethnic diversity and a high proportion of households eligible for free school meals.
- **Interviewee O** is a leader with responsibility for maths, English and adult skills development at a medium-sized post-16 education provider in the South East of England, serving a population with a high proportion of looked-after children and care leavers, in one of the most deprived wards in the UK.

Practitioners:

- **Interviewee P** is an English lecturer at a medium-sized, multi-site post-16 education provider in the West Midlands, serving a mix of rural and urban populations, with a mixed demographic and socioeconomic profile.
- **Interviewee Q** is a maths lecturer at a large post-16 education provider in London, which is part of a wider English group of providers, serving a population with a high degree of ethnic diversity and socioeconomic disadvantage.
- **Interviewee R** is a practitioner and curriculum development leader at a comparatively small post-16 education provider in the North East of England, serving an urban population in one of the areas of the country with the highest degree of socioeconomic deprivation, and a high proportion of white working-class learners.
- **Interviewee S** is a maths teacher at a large, urban, post-16 provider with multiple sites in and around a nearby city, in one of the most deprived local authorities in England, with a high proportion of white working-class learners.
- **Interviewee T** is an English lecturer at a medium-sized post-16 provider in East Anglia, serving a mix of rural and urban demographics, in an area that is ranked as relatively socioeconomically deprived.

3.1.2 Student focus groups

Sites to conduct student focus groups were identified from the wider pool of providers consulted during the interview stage, and selected on the basis of geographical spread, and the extent to which settings represented different approaches to supporting students through GCSE resits, as described in the interviews. The questions used during these focus groups were developed on the basis of the same literature informing the interviews themselves. The questions used in the evidence collection with students are included in Appendix 3.

The number of students involved in each focus group is as follows:

- Focus group 1 = 6
- Focus group 2 = 6
- Focus group 3 = 4
- Focus group 4 = 7

3.1.3 Ethics and consent

The fieldwork team created a consent form, which was shared with all interviewees for them to review and confirm their willingness to take part in the project. All consent forms, notes, recordings and transcripts were collected and stored in a secure, encrypted folder by the project lead team. Interviewees were made aware that their answers would be kept anonymous for reporting purposes. CfEY led on ethics and data protection, following their Ethics and Data Protection Policy, which were agreed to by EEF. The desk review did not require ethical approval from Warwick University, in accordance with ethics guidance which states that literature and systematic reviews do not require ethical approval.

3.1.4 Data analysis approach

Once the fieldwork was completed, the research team devised a methodology to integrate interview data into a single, secure platform. This platform was used to code observations made by interviewees against key areas of practice, which were identified as relevant to learner outcomes by the desk research. Coding areas were established on the basis of a combination of: preliminary findings from the desk research; and wider reflections on key catalysts and barriers for practice development, drawn from the research that informed the initial interview design (see above). The coding areas identified are listed below:

- specific teaching approaches/interventions used in interviewees' settings, in a:
  - positive context, and
  - negative context
- wider organisational curriculum and pedagogical approaches/models in use
- use of resources and technology in teaching
- supporting the motivation and engagement of learners, in terms of:
  - challenges and barriers to progress, and
  - approaches that they have adopted
- approaches related specifically to teacher supply, in terms of both CPD and recruitment
- activities focused on student voice
- Assessment for Learning of students
- activities intended to achieve other goals for learners (e.g., mental health, pastoral care)
- evidence of success in improving learner outcomes
- factors that enable successes
- structural and contextual challenges
- whether observations are related to maths teaching, English teaching or both.

Excerpts from all interviews were extracted and added to the coding document. Material coded against different areas was then recombined to build a body of findings that correspond to the themes, and those findings were then analysed by the fieldwork team to identify answers to the goals of the review as determined by the EEF. Conclusions were shared across the team for joint analysis, then shared with the EEF at an interim presentation to share progress and early findings. These preliminary conclusions were then refined further via analysis within and across the two halves of the review team, expanded after further exploration of the evidence, including student focus group data, and written up for final reporting.

The rationale for adopting this approach was based on an early consensus which emerged among the review team, EEF, and interviewees, that learners taking GCSE resits would struggle to articulate specific teaching practices or models which would be beneficial to them in the context of resits. When focus groups were conducted this consensus was borne out, with learner comments consistently focusing on the emotional challenges they faced as a result of being required to resit GCSEs they had failed. This tendency persisted even when learners were encouraged specifically to share any thoughts they had on potentially valuable teaching practices. As a result the team chose not to structure analysis of findings in relation to practices around learner perspectives.

3.2 Curriculum and pedagogy

3.2.1 Overall issues and barriers

The fact that resit assessment consists of repetition of content from learners' experiences in schooling was highlighted as a key issue by interviewees. This led some to argue that GCSEs are not the most appropriate qualification for pupils in this cohort to study; however, this debate is beyond the scope of this research.

Linked to the point above, some interviewees noted that in post-16 institutions they were expected to *"fix previous failures of 11 years of schooling over one year"* and noted that practitioners covering resits have only nine months to cover GCSE content, which in schools is spread across two years of teaching time, which they felt was a handicap in terms of their ability to achieve better outcomes for those learners.

One sector leader reported that, in comparison with schools, FE colleges do not buy into exam boards' assessment and teaching tools. They suggested that there may be an economy of scale issue here, in that it is less cost effective to purchase these tools for a smaller number of students.

> ***"I think that the main thing we're facing is actually, it's not a year's worth of resit, is it? It's nine months. So we're expected to re-deliver a curriculum, or some people are expected to re-deliver a curriculum, within the nine months, and get through it all. I think it's an easy trap to fall down, if we don't look at it as an upskilling."*** **Practitioner**

3.2.2 Deployment of existing or emerging approaches

All of the approaches we identified in interviews were either maths-specific or generic but deployed to support maths teaching specifically. This reinforces the finding in the desk review that specific maths support for post-16 GCSE resit practice is more widespread and coherent than support for English teaching. The team believe that this finding is significant even while acknowledging the prevalence of maths specialists compared with English specialists in our sample, based on the observations of colleagues with responsibilities for both curriculum areas. However, the team acknowledge that this imbalance exists in our sample, and recognise that specifically accounting for and correcting this in future research may alter the picture that emerges.

Approaches mentioned include the following:

- **Retrieval practice**: Three interviewees mentioned using retrieval techniques (specific examples that interviewees named included spaced practice/interleaving of curriculum content, and use of routine low-stakes quizzes as informal formative assessment) in maths lessons. One saw this primarily as a formative assessment technique, while another saw it as being more embedded into curriculum design and enactment/pedagogical delivery.

- **Maths Mastery**, described in a way that is coherent with the definition and principles laid out by the National Centre for Excellence in the Teaching of Mathematics (NCETM), was mentioned by multiple interviewees, with comments being generally positive about its impact on learning progress. One college was in the process of creating a catalogue of resources to support new colleagues and enable greater consistency. However, some institutions have had some issues implementing the approach as they felt that staff are somewhat reluctant to change their practice.

- **Focus 15** was identified by three interviewees as a strong approach that supports learning progress by breaking down the curriculum into more manageable chunks, allowing learners to make connections between the various topics.

> ***"If they can fully understand those 15 topics then they'll be able to get a Grade 5 on the foundation paper. It means they won't be able to answer all the questions but they don't need to be able to answer all the questions for Grade 5."*** **Practitioner**

The approach is also promising in its ability to make the content more manageable for practitioners. Many interviewees noted that one of the difficulties in teaching GCSE resits is the volume of content, especially in what is often a one- or two-term resit period.

- The **Five Rs** is a commercial revision approach that establishes a consistent pattern of activities revolving around Recall (of key facts), Routine (use of practice questions), Revise (focusing on a specific topic), Repeat (practise of exam questions) and Ready (a reference to focusing specifically on exam techniques). This approach was mentioned by several interviewees as being in use in their organisation. The approach received mixed reviews in our fieldwork. One interviewee felt that it was useful in giving pupils a constant routine and reducing teachers' workloads. However, another felt the Five Rs were "too choppy" and lacked a coherent underlying structure, and some generally found it difficult to implement.

- Pearson's **'post-16 boost' maths programme** was mentioned by two interviewees. Designed partly with resit students in mind, this combines a modified scheme of work, lesson plans, themed papers that contextualise maths to vocational learning, and on-screen diagnostic assessment. The conclusion of the sector leader who raised this was that this programme has provided as much flexibility for learners who struggle to engage with the traditional GCSE maths curriculum as is feasible within the current GCSE specifications.

- **Coaching for students**: Three colleagues had implemented policies to ensure that all resit students could access direct specialist coaching support from trained coaches with expertise in maths and/or English. These colleagues also emphasised that they have restructured other aspects of provision to ensure that this support is contributing to learner progress. The exact nature of how these coaches were recruited and/or trained for this role was not clear. One sector leader was very positive about the use of

'performance coaches' in her colleges. They supported students in addressing (largely academic) barriers to improved outcomes across all areas of learning, including maths and English. No evaluation evidence on this intervention was available.

> ***"I currently employ 15 members of staff over… three sites so they [learners] all get a specialist and contact time. So we don't do any independent study because… many colleges have one hour of independent study [for students]… those three hours are all contact time."*** **Senior leader**

Another interviewee also described making strategic use of peer coaching and/or mentoring in their support for students studying for resits, supplied by a mixture of students from elsewhere in their organisation and a local Higher Education Institution (HEI). The leader explained that:

> ***"We do learner voice every half term and what we do is we adapt our delivery style to meet that feedback. So there's a lot of extra wraparound support that goes alongside our GCSE provision. We have our coaching approach to CPD for teachers working on resits, and on top of that, we have catch-up classes. We have maths and English hubs, and we re-contextualise curriculum content to be accessible to the learners' experiences wherever we can."*** **Senior leader**

If delivered effectively, coaching appears to be a promising and innovative approach from the perspective of combining the goals of engaging learners and providing them with effective support in their academic attainment, as well as drawing on a high level of wider evidence of effectiveness (Cordingley et al., 2016).

3.2.3 Use of assessment

3.2.3.1 Use of formal assessment systems

Most interviewees described various systems, tools and protocols which all colleagues in their organisation were expected to use for conducting assessments and responding to assessment data relating to students' progress. However, the extent to which these systems were articulated as organisational protocols that all colleagues routinely used varied – in some cases it was positioned as being more aspirational, and in others it emerged as an extension of practices instituted by a single practitioner or middle leader.

We also noted that the stated purposes of these systems varied – some interviewees described them primarily as tools for targeting and differentiating teaching practice, others emphasised their value in supporting efficient delivery in the context of limited resources, and in one case they were described as a tool for supporting learners' motivation and engagement.

> ***"So, we'll go through and we give a little diagnostic test… based on [the] topic and then the teacher will know roughly where the strengths and***

> ***weaknesses are and we can then have a sense of what the kids already know because [teaching what they already know] just adds to the kids being disengaged/apathetic towards maths, that sort of thing. So if we're just focusing on the areas that are missing, the gaps in the learning, that will somewhat help… But we're finding it very difficult to get that implemented this year."*** **Senior leader**

One interviewee, quoted above, noted that in their institution they had made a point of encouraging staff to use assessments administered at the beginning of the year to tailor their focus on particular aspects of curriculum content, and ensure that they only cover topics that learners struggle with. However, they also observed that this approach has been somewhat difficult to implement because, as a senior leader, they have a range of responsibilities that they are juggling, making implementing this dependent on their staff taking the lead; as a result, the implementation is sporadic at best.

Another institution analyses data from the previous cohort's GCSE results to develop an understanding of where pupils' knowledge is weakest, and then uses that to target schemes of work for the following cohort.

> ***"We really focus in on looking at the data that our students give us each time they sit the exam. So we do quite a heavy analysis on the 'post' results, looking at what our students are now understanding compared to previous cohorts and what needs to then be tailored in our scheme of learning to fill in those gaps of our learners… From May all the way through to July to when teachers break up, we have almost like a six-week period where everyone is fully focused on getting a scheme of learning right."*** **Senior leader**

One institution adapts its formal assessments through the year to ensure that learners are only tested on content they have been taught, with the ultimate goal being that they do not become demoralised.

3.2.3.2 Use of informal assessment approaches

Several interviewees described assessment systems they had developed themselves. We see these as informal as there was little evidence to indicate that these approaches extended beyond an individual's personal practice. These assessments came in the form of creative writing tasks in English and quizzes in both maths and English. It was felt by one practitioner that informal assessments were particularly important in the wake of Covid, as presenting learners with a full exam paper felt counterproductive and only served to heighten their fears around exams.

Interviewees we spoke to saw 'low-stakes' informal assessments as a crucial way of assessing where learners are at when they join and throughout the year. In the case of the latter, the assessments also allowed practitioners to make adjustments to the curriculum content according to learners' gaps in knowledge. These informal assessments were also noted as

being vital in encouraging them to be able to recall information and think creatively under pressure.

3.3 Learner needs

3.3.1 Non-academic barriers to achievement

Our fieldwork identified a range of non-academic barriers to learning for those resitting GCSEs:

Information and support for transitions from school to college

> ***"We don't know the students, so transition at 16 really needs looking at. Young people can put in multiple applications and unless a student has an EHCP [Education, Health and Care Plan], you get scant information about strengths and weaknesses."*** **Sector leader**

Although the 'fresh start' in a new institution can benefit many post-16 learners, including students studying resits as some participants in our focus groups confirmed, several interviewees suggested that a lack of information around transition can impact on progress. Colleges often struggle to access basic information about students' GCSE results or other contextual information, including about special needs or mental health issues. This appeared to be particularly challenging in institutions where pupils were coming from a range of secondary schools. While there was some disagreement about the amount of information needed, interviewees were generally in agreement that it would be useful to receive more information about their learners during, or potentially even in advance of, the transition process:

> ***"Pupils might assume that the support they had, or if they had exam arrangements at school, that that kind of goes with them and it doesn't – we have to apply for that all over again. But unless we know that we need to apply for it, we don't know what they got at school. So they might have had 25% extra time; they would assume that we know that and we don't."*** **Practitioner**

Interviewees also reported how students often struggled with expectations around independence, self-discipline and self-regulation, especially if transitioning from secondary schools with clear boundaries and tight behaviour policies. Interviewees described a dynamic in which the different expectations in post-16 study compared with their experiences at school caused additional challenges with learners who were familiar with more interventionist approaches to behaviour for learning.

However, on the whole, learners interviewed expressed enjoying the freedom they have in FE as it makes them feel they are 'valued as a person' and as an individual. One felt that in comparison, in secondary schools, teachers try to mould them into a certain person and do not embrace their individuality. Another learner also saw college as an opportunity to have a fresh start where teachers have not yet formed opinions on them and how they will behave.

> ***"In secondary, you're more forced to be a certain person. They create a person out of you. Whereas in college, you're just valued more. You're valued as an actual person, not just someone that the school system can use."*** **Young person**

One practitioner stated that, as a result of the pandemic, some learners **lack exam experience**, which has had a detrimental impact on their ability to thrive in their GCSE resits. For example, practitioners noted that this lack of experience means that some are unfamiliar with exam halls and the expected behaviour, and others do not understand that exam dates are not flexible.

> ***"So some of them might have never sat an exam, it might have all been based on what was in their books or they might have done an exam, but not had a time limit on it. All sorts of things… The other thing that was really noticeable was when we were telling them last year about the dates of the GCSE. They were like, 'Oh, I can't make that date.' I'm like, 'Doesn't work like that'".*** **Practitioner**

Two sector leaders also agreed that colleges – and 11–16 schools – needed more effective approaches to transition in order to improve outcomes for learners taking resits. They observed that this is made more difficult by young people being allowed to put in multiple applications, reducing the time available to colleges to prepare for the arrival of a new cohort with particular needs around resits.

3.3.2 Social and emotional barriers

All interviewees, but practitioners in particular, mentioned a range of **social and emotional barriers** such as a lack of motivation and apathy, a lack of confidence, general issues with mental health and feelings of 'being a failure'. Some learners also echoed the latter point:

> ***"It's embarrassing to see other people pass, and we're just left behind."*** **Young person**

It is worth noting that some of these issues have been exacerbated by the pandemic, particularly barriers relating to students' mental health.

However, it is important to recognise that the dynamic around emotional barriers for students is complex, and not to assume that all students studying for resits are demotivated/disengaged by default. Some learners felt that there is more support in college compared with secondary school, with some also feeling that in FE, teachers understand them more and, as a result, are better able to support them with issues that they are having.

> ***"They try and make sure that everyone has peace of mind where they can do it without stressing, and that's what I kind of prefer to have, really, because when I was in secondary school, there wasn't really much communication, it was more, 'Oh, are you all right?' 'Oh, yeah.' 'Okay, good. We'll just send you on your way.' But here it's, you came for a talk about it."*** **Young person**

One student also stated that changes in the structure of study in post-16 (specifically the lack of homework) was something they found helpful for their mental health and reduced their level of stress in relation to study for resits.

Opinions differed as to the extent to which learners lack motivation and are not engaged in their resit studies. However, roughly half of the interviewees said that learners are often disengaged and apathetic towards their resit studies and see their resit programme as an unwelcome burden. As a result, they do not invest as much energy into studying these resits compared with the subjects that they are choosing to study, where they have more agency and generally enjoy their courses. Many interviewees suggested that the lack of motivation is simply due to them having to resit a course that they had already 'failed' at.

Others felt that learners do not believe that having a maths and/or English GCSE is relevant to their chosen career path, and as a result, aren't very motivated to work hard in these lessons. This idea was challenged by one sector leader who had internal data to show that resit students in their setting had generally high levels of extrinsic motivation to succeed at maths and English. However, they argued that there is a key inflection point for providers in order to ensure that they are capitalising on this motivation from the earliest possible point in their post-16 journey.

The majority of learners saw their resits as a vital step in their broader career goals. However, despite being viewed as a stepping stone, some questioned to what extent it will be useful once they are in their future careers.

One senior leader noted that as a result of a lack of motivation and general apathy in their setting, learners often struggle to do work independently – pupils will *"only do the work if you're standing over them".* This, in turn, makes it difficult to set class work and homework online, including on technology platforms that require them to complete tasks alone.

> ***"Learners are extrinsically motivated to achieve in their English and maths GCSEs [and] understand they need it. However, [other factors cause] them to get demotivated and demoralised."*** **Sector leader**

Some learners also expressed that, while they did not necessarily find the subject engaging in and of itself, they did value the opportunity to overcome a previous failure (when supported by teaching which they felt was more responsive to their needs). This indicates that while there are undoubtedly challenges posed for teachers by the negative previous experiences learners faced, there is also considerable potential to use transition to post-16 as an opportunity to change students' perceptions of subjects in which they have struggled.

> ***"Teaching here is better than at my old school. At school, English teaching didn't work for me, I didn't understand what the teacher was telling me. My college teacher takes their time and makes sure we understand. I want to succeed because then I feel proud, like I've achieved something."*** **Young person**

Wider barriers to accessing the curriculum and teaching

Some interviewees highlighted that there were issues around how pupils' cultural capital influences their familiarity with assessments' underlying context. This can prevent them from understanding the focus of many exam questions, and thus limits their ability to identify the appropriate responses to those questions. While they noted this is particularly true of English resits, they mentioned that it also impacts learners' ability to decipher maths questions when they draw on or present real-life scenarios. During one of our focus groups, learners we spoke to highlighted this issue, expressing that they were unable to pass their English GCSE because the wording of the questions made it inaccessible to them.

> ***"I failed my English [because] I didn't understand the creative writing question."*** **Young person**

One practitioner felt that **learners find it hard to relate to their teachers** because of the different life journeys that learners and teachers have been on, which causes a disconnect between the two and prevents them from building a strong rapport with each other.

3.3.3 Approaches to supporting learner needs

As with the desk review, the fieldwork did not reveal any strong, well-evidenced approaches to addressing non-academic barriers to learning for these students. However, interviewees described a small number of approaches that they believed were having a positive impact.

To support pupils through the transition to post-16, one institution developed close links with 'feeder' secondaries, which allowed them to more easily access learners and receive information with those schools. This approach may, however, be difficult for all institutions to adopt as it relies on pupils arriving from a small variety of local secondary schools.

One institution used specially trained English and maths coaches who, while also focused on academic issues, attended to a range of barriers such as low attendance, low levels of motivation and mental health issues. This particular approach was distinctive in that it had been the subject of some evaluation activity through a Master's-level investigation by the leader driving it, and which included rolling out the approach in six other local colleges. In all but one of the participating colleges, GCSE results, attendance and access to enrichment programmes all improved after the approach was implemented in their setting. One sector leader also referred to a college group's widespread use of 'performance coaches', who played a similar, combined academic and pastoral role.

In response to learners' mental health needs, one institution has started to run extra classes in smaller groups and keep classrooms open for learners to access.

> ***"We tend to have a lot of students that have high anxiety, particularly since Covid. So in response to that, we have classrooms open all the time. We have a focus group for particular students and I've never worked anywhere else where you actually have students hanging out in the maths and English department voluntarily."*** **Senior leader**

To build rapport between practitioners and learners, one college has been trialling an intervention in which maths and English teachers go into vocational classes and allow the students to teach them content from those courses. They emphasised efforts to collaborate with colleagues working in vocational subjects, and experimenting with flipped classroom approaches, which they felt were valuable in giving learners experience of teachers working outside of their comfort zone. This intervention has been positively received in their institution and they noted that data they gathered on this so far has been promising, and students want it done more regularly.

In relation to English, one institution decided to focus more on texts specifically selected by teachers to be closer to their learners' experiences to support greater engagement. While they do not have detailed evidence of the impact of this, they believe that learners have been more engaged and motivated as a result.

3.4 Teacher needs

3.4.1 Teacher recruitment and supply

> ***"A big part of the problem is the lack of maths specialist teachers working to support learners to progress in GCSE maths. However, this is a reflection of a wider national issue in terms of attitudes to maths and numeracy, as there is a widespread acceptance of poor numeracy, which hinders a focus on learning maths and then the supply of people with the capacity to support it."*** **Senior leader**

Through our fieldwork, a general perception emerged that GCSE resitters need teaching of the highest quality, but are not receiving this for a variety of reasons. These reasons were felt to be predominantly structural. In FE, as compared with schools, there is a lack of specialist practitioners (due primarily to pay disparities, as well as a perception of FE being less prestigious), and as a result, the general quality of teaching practice and level of teaching expertise are comparatively lower than in the school sector.

Multiple interviewees speaking for the sector as a whole argued that the issue of a lack of expertise is particularly acute in maths, where the pool of candidates tends to be smaller and often practitioners who are subject specialists want to teach A-levels rather than GCSEs. This also mirrors a more education-wide issue related to the competitive nature of salaries and career prospects for highly qualified maths experts. As a result of this, the pool of qualified and expert maths teachers is particularly constrained, which has inevitable consequences for the quality of practice.

One senior leader noted that recruitment in FE is particularly difficult as the salary is lower than in primary and secondary schools. This makes attracting a workforce with a high level of prior qualification to teach these subjects difficult, and is one factor leading to many FE institutions having a less-specialised workforce than their colleagues working in schools.

> ***"In an ideal world, we'll say we want them to have a degree in a relevant thing, teaching, training, and at least a Level 3 in the subject that they're teaching… But recently, we have recruited a few trainee teachers who are newly qualified. So they might not necessarily have the experience. But recruitment's quite difficult as it is because schools pay more than FE so they attract more teachers."*** **Senior leader**

However, in contrast to this view, some sector leaders argued that a lack of subject-specific qualifications is not always a barrier to effective practice, as long as there is effective CPD support available to develop teachers' subject expertise. The team recognise this point, but note also that several interviewees reported encountering challenges and obstacles in organising development for their colleagues that could achieve this and offset the structural challenges that post-16 providers face – see the following section for more reflections and observations on this point.

Learners themselves were largely positive about the teaching they receive in FE, with many highlighting that their teachers take more time to explain the content and ensure they understand it compared with teachers in secondary schools. Smaller classes were also noted as a factor that plays into them feeling more supported in FE compared with secondary school.

> ***"I feel like there's a lot more support in college than there is in secondary school, but it's like in college they will actually go into detail about it. If you was to do an exam here, they would go into detail about how you can improve on certain questions or how they can help you on a particular subject, and then therefore, improve students a lot more when it comes to GCSCs than it does in secondary school, because they would tell you, 'Oh, yeah, you need to do, this, this, and this,' but they wouldn't explain how you went wrong."*** **Young person**

> ***"Here it feels more simple, but in school, it felt like they're made out to be complex, but now in college they're made out to seem like it's not really complex."*** **Young person**

3.4.2 Teacher development needs

> ***"There has to be investment in staff training; there are so many problems with current staff. It's important that the professionals in front of students are skilled… If centres could tap in on a national scale, this could potentially reduce the problem significantly but it needs to be a bespoke and significant training programme."*** **Sector leader**

Responses to questions around teachers' development needs centred on the value of having access to teachers with a high level of subject and pedagogical knowledge specifically in relation to maths and English. There was widespread acknowledgement that the majority of teachers in FE do not have a formal teaching qualification, and they lack subject expertise and knowledge about specific pedagogy and approaches to teaching. The latter point has been

highlighted as particularly pressing, as many saw an understanding of pedagogical approaches as being the single most pertinent factor in providing learners with good teaching that provides a strong foundation to pass their GCSEs. Where interviewees were more positive about the degree of teaching expertise available to them (and usually such interviewees were working in sixth-form colleges rather than FE colleges), they noted that their approach to the recruitment of teachers for GCSE resits was focused on replicating as closely as possible the hiring conditions in providers supporting A-levels.

The extent to which the conditions around CPD provision in post-16 is suited to supporting effective pedagogical practice development is unclear. However, multiple interviewees described issues that they faced when trying to organise professional development to promote improved teaching practice, and through it improved attainment, for resits. Barriers to success here, which were mentioned by interviewees, were related to:

- The lack of provision of effective CPD

  "English is much less well-resourced than maths – apart from the Level 5 available through the ETF [Education and Training Foundation], which isn't suitable for qualified English teachers. There isn't a lot available." **Senior leader**

- Disengagement from staff and unwillingness to update their teaching practice

  "I'm trying to implement [a new approach] but it's proving difficult with staff. Because they're sort of set in their own ways. And they've taught the same way the last how many years and so, therefore, they are reluctant to change." **Senior leader**

- Difficulties in resourcing quality CPD for staff to pursue, in terms of both purchasing and staff cover

  "We have five CPD days a year that we can take, which is all dependent on, I suppose, your timetable. There are things going on sometimes at half term. You can take those, as opposed to going in and taking a day's holiday." **Practitioner**

Managing pupil behaviour at FE was mentioned as a specific developmental need many practitioners felt, with participants explaining that teachers at FE are not provided with the skills, knowledge and time to tackle challenging behaviour.

3.5 Leadership and organisation

3.5.1 Whole-college approaches to teaching

Multiple interviewees argued that the creation of a whole-college teaching model for resits is key to ensuring that pupils do not view resits as optional or less important than their other subjects.

In one institution this was achieved by organising systems for coherent team-teaching, and bringing maths and English tutors into vocational teaching spaces. In another, resit tutors were

based in vocational areas rather than within a separate maths/English department. Outside of signalling to pupils that resits were a crucial part of their learning, it was suggested that creating a whole-college approach bridged the gap in communication between vocational and GCSE tutors and allowed them to work together to ensure that subjects complimented one another.

Within subjects themselves, one interviewee also explained that there was a pre-existing, consistent approach to learning across the college, which colleagues were expected to adhere to, with all teachers using the same resources and homework strategies to ensure that no learner falls through the cracks.

> ***"I think most of the kids are just disengaged; they're being forced to do the qualification they don't want to do. One thing I've tried to change this year at college is how maths is framed to seem. Because most colleges position maths as an add-on… I was trying to try my hardest to try and frame maths as if it's like it's part of the BTEC course."*** **Senior leader**

3.5.2 Logistical issues

One sector leader suggested that timetabling, which tended to mix all GCSE resitters together across different vocations, failed to take advantage of strong vocational learner identity. If students took lessons with a cohort of other students from similar vocational courses, this leader suggested that this could support improved contextualisation, better attendance, and less fear of making mistakes and revealing low abilities with students they do not know. This interviewee mentioned two colleges that might be taking this approach. They noted that it is probably easier to do in larger colleges, the implication being that organising this effectively depends in part on a substantial, well-resourced and experienced operational team working in support of practitioners.

One colleague noted the use of an internal observation/review process, organised by a dedicated member of the Senior Leadership Team with a remit to monitor and support quality practice. The process as described consists of a series of micro-scale internal reviews of practice, focused on specific areas of pedagogy, and based on at least two distinct observations of lessons per colleague. This then produces both a picture for internal purposes of strengths and areas for development in relation to that area of practice, and oral feedback given to each colleague, informed by the observations and led by the Head of Quality.

The interviewee described this as not only a key part of their strategy but also a source of informal, formative evaluation data regarding the effectiveness of other teaching approaches. For example, this internal evaluation process was the basis of the interviewee's assessment of the challenges and benefits of implementing specific teaching approaches. This model of internal evaluation appears to be a comparatively advanced and detailed model of strategic organisational self-evaluation and development, providing a level of detail and systematisation that was not apparent in any comparable reflection activity described in other interviews. This would suggest that the general prevalence and quality of self-evaluation processes in providers are low, but also that recognition of the value in conducting systematic internal reflection, observation and evaluation of aspects of pedagogical practice is not zero.

One institution had dropped January mocks altogether, as it was felt that sitting them only demoralised learners further if they did not receive a Grade 4 or above.

4. Synthesis and Discussion

4.1 Practices and Interventions

Key questions for this section:

- *What are the most promising interventions in post-16 GCSE resit practice?*
- *What stage of development have these interventions reached, and what is the appropriate next step for their testing and development?*

The desk-based review indicates that while there are numerous, diverse practices and approaches to improving provision and outcomes in post-16 GCSE resits, there are relatively few 'packaged' interventions designed specifically for this cohort and context. Although many studies sought to evaluate or explore the value of these interventions, most studies since Maughan et al. (2016) have been smaller scale, limited in their methodological rigour and/or focused on student/staff attitudinal outcomes rather than academic outcomes. They have explored general pedagogic practices or principles, e.g., formative assessment approaches, blended or flipped learning approaches, the use of starter activities or the use of diagrams in maths. We have identified a small number of specific interventions or programmes that are being used in some post-16 provision, to mixed effect. We have included here an outline of the current stage of development, conceptually and practically, and the appropriate next steps for testing and evaluation. Most of these interventions relate to the theme of curriculum and pedagogy; some are also connected to technology.

There was limited overlap between approaches summarised in the desk review and those mentioned in the interviews. This may be an indicator of a post-16 environment where the use of research evidence has a limited impact on practices. Diagnosing exactly why this might be is a complex task in its own right, but there exist a number of factors, most of which are fairly widely-recognised, which are likely to be relevant. The review team have explored these later in the report, but to acknowledge some here:

- Staffing shortages, caused by comparatively low pay and prestige associated with working as GCSE teachers in post-16, reducing capacity and demand for professional learning in the sector.
- Limited resources, in terms of both budgets and staff time (which is a consequence of staffing shortages noted above), to take part in professional learning for the purposes of knowledge mobilisation.
- A comparatively atomised/fragmented system, where knowledge-brokerage is largely the preserve of a limited number of institutions, and those institutions have significant constraints beyond their control on their reach and impact.

Where pre-existing approaches were mentioned, it was largely by colleagues working as part of projects run externally, such as by the CfEM – college practitioners and leaders we spoke

to did not appear to routinely search out curriculum and pedagogy approaches in a systematic way. The comparative dominance of CfEM, where practitioners develop and examine approaches as part of an action research study, has the potential to bring about widespread improvements in outcomes for resit learners. The influence of the CfEMs has been significant, and there is value to further exploring why its influence on sharing practice was more successful than other similar initiatives, to build on its achievements.

4.1.1 Maths-focused interventions

In recent years, a small number of defined interventions, as identified in the desk review, have been developed for promoting success in post-16 GCSE resits in maths. This section summarises our findings from the literature review which relate to questions around the continued development of these interventions.

The **5Rs intervention** has undergone comparatively extensive evaluation relative to other interventions we identified. The intervention provides training for teachers, diagnostic tests and a scheme of work and lesson plans focused around a clear lesson structure. Each 5Rs lesson is structured into five sections:

- Recall (recalling key maths facts)
- Routine (completing practice questions)
- Revise (revising one specific topic)
- Repeat (practising exam questions)
- Ready (focusing on exam technique).

An EEF-funded efficacy trial was run in 2019–21. Although disruption from the Covid-19 pandemic meant no attainment data was available for the evaluation, nonetheless the evaluation found that the intervention holds potential promise; it was well-received by teachers and implemented as planned until the pandemic disruption began in March 2020 (Hanley et al., 2021). The intervention is now being delivered in partnership with the Association of Colleges, a post-16 membership organisation, which provides support, advocacy and training across the sector. Another trial was recruiting 80 post-16 providers (EEF, 2023) at the time of writing this report. The findings from this will be significant for better understanding both the impact of 5Rs and the potential principles that support its implementation. The fieldwork found that 5Rs had been implemented in a small number of the providers interviewed by the team, and reception from those involved was mixed, with some positive reactions but also a comment that it did not suit the needs of learners.

As we have noted above, some interventions have been developed with a view to embedding more ‘real world’ approaches to teaching and learning. **Realistic Maths Education (RME)** is an intervention that has been developed by Manchester Metropolitan University, and intends to build on students’ “informal sense-making in response to imaginable and meaningful contexts”. A trial with Year 7 pupils (Demack et al., 2022) found no evidence of impact on maths attainment, although caution is advised in interpreting this finding due to Covid-19 disruption. An earlier quasi-experimental evaluation with post-16 learners (Hough et al., 2017) found some potential impact on students’ attainment in ‘Number’ but not ‘Algebra’. The relatively small scale and attrition within this study also makes it challenging to draw robust

conclusions. None of the practitioners spoken to by the fieldwork team described RME as being in place in their context.

Maths-for-Life also takes a problem-solving focus, helping students to cement foundational skills and concepts. The intervention involves professional development and networking for teachers, and encourages dialogic approaches to teaching. An EEF-funded project was set-up in 2017–18, due to be led by the Behavioural Insights Team. The study included an initial pilot evaluation, followed by a two-arm efficacy trial in the 2018–19 academic year (Sanders et al., 2021). Documents suggest that the pilot did go ahead but there was not a published evaluation report available for this initial stage nor the full evaluation at the time of writing this report, and none of the practitioners interviewed by the fieldwork team described this intervention as part of their curriculum approach to resits. This means that we have, as yet, no evidence either way on the value and potential effectiveness of Maths-for-Life for post-16 learners and teachers.

There are examples of other approaches or interventions that have been developed and implemented and, to some extent, evaluated. The studies have tended to be on a very small scale, and typically carried out by teachers or researchers involved with their development. The desk review, for example, highlighted particular interest from a number of post-16 settings in using various online platforms to support the teaching of maths. **Hegarty Maths** and the **Focus 4 resources on Maths Box** were used with students, with teachers reporting potentially promising findings in terms of engagement (Arvind et al., 2021a, 2021b). Detailed information on how the approach was used and robust data on student attainment were not available in the corresponding study reports. While online platforms and resources and flipped/blended learning approaches appear to be quite popular with practitioners in post-16 settings, specific and high-quality evidence relating to the platforms and their implementation for GCSE resit learners is not currently available.

Teacher professional development has featured as a core element within a number of the specific interventions described above. A further study by Johnston-Wilder et al. (2017) describes the development and evaluation of a four-day training course (**Teaching for Mathematical Resilience**) designed to support teachers to develop maths resilience in their learners. The course received development funding from the Education and Training Foundation and was delivered to teachers in 2016. Some limited but positive qualitative data is presented in the evaluation section of the study. While useful for gaining a sense of how valuable participants found the training, we do not yet have any insights about the potential for this kind of training to contribute to more effective teaching and positive academic outcomes for learners.

A further approach currently being trialled by the EEF is the **Basic Maths Premium**. This involves providing additional funding (up to £500 per student) to support teaching and learning in post-16 maths. While not a specific ‘practice’ or intervention (indeed it is more of a policy intervention), the evaluation will likely reveal the kinds of approaches and investments that are made with the additional funding; this may be helpful for inferring the extent to which this additional funding has improved learners’ outcomes. The evaluation report for this study is due in summer 2023 (EEF, 2023).

4.1.2 English-focused interventions

The one dedicated English-focused intervention identified was the **Assess for Success** programme, which was created by Manchester College. This provides teachers with paper-based diagnostic assessments to establish students' strengths and weaknesses with English skills, as well as tools for monitoring students' development, by both teachers and the learners themselves. Teachers are also provided with a programme of CPD, including training, peer mentoring and a 'community of practice'. A pilot evaluation of the programme was conducted in 2018–19 (Taylor et al., 2019). While some areas of promise were noticed, the evaluators found that significant development of the intervention was needed before it could be further rolled out and trialled. At present, there are no plans for a full evaluation of the programme.

4.1.3 Interventions focusing on English and maths

Connected to the interest in contextualisation and 'real world' learning seen in some of the sections above, a pilot study was conducted examining **embedding contextualisation in English and maths GCSE teaching** (Runge et al., 2019). This intervention focuses on training teachers to embed 'real life' and vocational examples in their teaching, and was developed by the Association of Employment and Learning Providers (AELP) and Mathematics in Education and Industry (MEI). Evidence from the pilot found that engagement with and use of the contextualised approaches were limited within lessons; there were also questions about the extent to which a contextualised approach adequately aligns with a GCSE resit exam that does not include or promote these kinds of strategies. Again, the recommendations were that significant further development was required before this intervention could be tested on a larger scale and promoted to practitioners.

Finally, some of the strongest evidence in the desk review came from the randomised controlled trials designed to test the impact of **sending text messages** (to students and/or their study supporters) (Groot, 2018; Scandone et al., 2021). The texts were designed to promote attendance at classes as well as engagement and motivation. An initial trial (Groot, 2018) suggested potentially positive results for English and maths attainment. However, a larger trial of **Texting Students and Study Supporters (Project Success)**, including more students and additional trial arms, found no impact on students' achievement or attendance (Scandone et al., 2021).

4.1.4 Observations relating to the state of interventions for resits

Readers will have noticed the relatively limited set of interventions that have been evaluated, and in general, the weak evidence base that exists in relation to these. Our findings in this section also point to a potential evidence 'pipeline' issue. We have highlighted a number of interventions that have been tested at a pilot phase but have then been deemed unsuitable – in their current state – for more widespread rollout and evaluation. Evaluators have presented recommendations of where the interventions need further development in order to be more accessible, usable or aligned with assessment requirements.

There are very few examples of interventions that have been effective with pre-16 age groups and adapted for post-16 learners. A small number of interventions have sought to adopt

principles from other evidence-informed practices (e.g., formative assessment, use of spaced practice) and have incorporated these into new post-16 focused interventions. Examples of these include the 5Rs programme, the Assess for Success approach and the text messaging trials. However, the findings from these evaluations suggest that transferring and translating these principles into initiatives designed to support GCSE resit learners in post-16 contexts is not straightforward, and does not necessarily lead to a workable intervention that will yield positive outcomes for learners.

4.2 Principles and components of provision in post-16

Key questions for this section:

- *What are the perceived characteristics of effective provision for resit teaching, learning, curriculum and assessment?*
- *What are the specific factors that need consideration, in terms of subject deployment for English and maths?*

4.2.1 Curriculum

Contextualisation of the curriculum aligned with students' perspectives and interests

One aspect of practice frequently raised in the literature and in our fieldwork was contextualisation of the curriculum. Contextualisation of learning (usually involving some kind of 'real world' and/or vocational curricula connections) has emerged as an important theme in the literature over recent years. Both the literature (see e.g., Higton et al., 2017) and findings from the fieldwork suggest that post-16 leaders and teachers see potential value in contextualised approaches, often believing that they will help to engage students and thus promote learning. In the fieldwork, many interviewees explained that they re-contextualise curriculum content to incorporate texts and examples closer to learners' experiences to make it more accessible, and also motivate and engage them in their resits.

Evidence relating to the value of these approaches in terms of students' actual academic attainment, however, is less strong. The evaluation of RME mentioned earlier suggested some promise in relation to 'Number' outcomes (Hough et al., 2017) but significant attrition to the study substantially undermines the findings. Maughan et al. (2016) found only 'weak' evidence in relation to contextualised approaches; and a pilot of a contextualisation programme (Runge et al., 2019) found very mixed engagement from teachers and concluded that major redevelopment was needed prior to the intervention being rolled out further.

While there are a number of widely held assumptions apparent in both the literature and the profession (including those spoken to during the fieldwork) about the value of contextualisation for post-16 resit students, the evidence relating to increased engagement and academic outcomes is not there to robustly support them. Moreover, our findings point towards the complexity of designing and embedding contextual approaches; they require significant shifts in how teachers operate and deliver their curriculum, and also require students to adapt to a new way of thinking about and experiencing these subjects.

Further work in relation to conceptualising, theorising and applying contextualised approaches is likely to be valuable. This work might look to separate out different components or aspects of contextualisation to focus on. Contextualisation, for example, often seeks to enhance motivation, make connections across the curriculum, and provide concrete examples and activities – all with varying levels of integration with vocational aspects of students' programmes. There are also considerations linked to the alignment of a contextualised curriculum with the (more formal and non-contextualised) requirements of GCSE examinations (Runge, 2019).

'Core' knowledge vs targeted 'catch-up' approaches

Another sub-theme within studies of the curriculum was the question of whether to teach 'core' knowledge as a whole, or to adopt targeted approaches that focus entirely on gaps in knowledge. Support for the former was particularly apparent in mastery-focused programmes and programmes designed to cover common topics across the curriculum. The 5Rs programme (see above, and Hanley et al., 2021), for example, offers one example of a comprehensive programme of this type. There is a clearer picture of what a comprehensive curriculum programme looks like in maths than in English – neither the desk review nor the fieldwork uncovered anything comparable in terms of 'core' curriculum development for the latter subject. Programmes in English (as above) include the Assess for Success programme, where there is a greater emphasis on diagnostics and identifying and addressing student strengths and weaknesses, rather than a standardised common curriculum.

Many practitioners in both the literature and fieldwork argue that there is value in a more targeted approach, with strong diagnostic assessment identifying gaps and a targeted strategy to address them. Leaders in recent studies (Higton et al., 2017; Ireland, 2019) offer support for high-quality diagnostic assessments. An idea connected to this position was the importance of recognising the nature of resit learning, with learners having already been through GCSE courses and having gaps in knowledge.

Fieldwork interviewees often shared this sentiment. Multiple interviewees described a considerable amount of benefit for practitioners and learners from adopting systems and processes to determine students' specific learning gaps and focus teaching practice on closing those gaps. Some argued that tailoring the content was essential to keeping learners engaged and motivated in their course, given the barriers to engagement those learners faced. However, this view was not universally held by interviewees, with some instead prioritising addressing core curricular knowledge as a whole. These interviewees were generally dismissive of the value for their learners of these 'catch-up' models of practice. One interviewee who spoke in detail on this point noted that, in their experience, their primary role was to cover the core curriculum in their subject to a high standard. They believed that their learners had not received this support at pre-16 level. This view was expressed exclusively by colleagues supporting students through maths resits.

It is likely that learners will have issues with some (but not necessarily all) areas of core knowledge that need particular attention as well as some relevant prior learning on which to build. As noted above, there is an indication that, in some cases, gaps in fundamental knowledge emanate from missed learning at or prior to Key Stage 4; potentially, these can be

successfully addressed with targeted practice, as with Stewart and Dobson (2021) using lesson starters designed to improve foundational skills from the Key Stage 1–3 curriculum.

4.2.2 Pedagogy

Gaps in the evidence about pedagogy for these learners

The review did not identify well-evidenced guidance for specific teaching and learning strategies. Nor was there much discussion of how good post-16 academic-focused pedagogy might differ when compared to Key Stage 4 GCSE maths and English teaching or pedagogy more generally. Some programmes based their approach on those found to be effective elsewhere, including mastery approaches, and cognitive science strategies. There were some suggestions that, if anything, principles for effectiveness pre-16 are even more important to get right for learners who often have negative prior experiences of learning. Hough et al. (2017), for example, in the RME evaluation had success with model-building and visualisation approaches; these appear particularly useful for learners who have found more abstract approaches inaccessible.

Participants in the fieldwork research rarely commented on specific pedagogical strategies, and rarely, if ever, identified coherent models of pedagogy that were in use in their settings. It is possible, though not necessarily productive, to speculate on the reasons why this might be, and further investigation into this topic might reveal some powerful evidence around the nature of the challenges that new or scaled-up interventions must negotiate in order to consistently lead to improved outcomes for students.

The value of subject-specific approaches and expertise

Another related consideration, discussed further below in relation to teacher supply, is the value of subject-specific approaches and expertise. The Maughan et al. (2016) review identifies general strategies for English like peer tutoring and principles like sustaining support over time; the authors also discuss effective subject-specific pedagogy in English – such as blending whole-language approaches, linguistics and phonics. Similarly for maths, evidence pointed to both more general strategies like increasing/maximising time spent, and fostering classroom discussion, as well as approaches that seem of particular importance in maths such as connecting the abstract mathematical concepts with concrete examples and activities.

Learner preferences regarding pedagogy

It is also worth recognising the factors that learners themselves identify as being most beneficial for their experiences with resits – eliciting detailed answers on this question has proved challenging, and carries some methodological risks, which need to be acknowledged. However, the principle that learners are key actors in their own learning processes is a sound one, particularly where motivating and engaging those learners is identified as a major barrier to progress. At present, we have identified the following characteristics of practice as being ones that learners state they find valuable for supporting resits:

- providing good revision and recap approaches

- covering a range of relevant topics
- supporting the development of new skills
- clear goal-setting.

4.2.3 Technology and resources

The use of technology was a common focus of many of the smaller action research projects, particularly in maths. There are many examples of studies exploring flipped or blended learning approaches, without firm evidence of effectiveness at this stage. Many uses of technology (including flipped and blended learning approaches) were used to facilitate or support pedagogical or curriculum principles (e.g., effective diagnostic assessment or spaced practice) as well as meeting learning needs (e.g., tackling issues of engagement; see also the next section).

More generally, technology-focused studies targeted development of the curriculum and high-quality teaching and learning resources. Studies aimed to use technology to increase motivation and engagement (Arvind et al., 2021a, 2021b); others to provide specific curriculum content such as visualisation and model-building resources in maths (Hough et al., 2017). The evidence for technology for post-16 resits is patchy, and success in post-16 programmes like the text message approach in Groot (2018) has not been replicated in subsequent evaluations (Scandone et al., 2020).

Some studies touched on the danger of technology displacing rather than enhancing practice, for example with technological solutions to catch-up leading to learners not getting the benefits of face-to-face contact, challenges of transferring learning via technology to pen and paper activities (like the GCSE examinations), and the time and cost requirements of adopting new technologies (Van Effenterre, 2017). These dangers notwithstanding, technology has obvious appeal to support approaches discussed in other sections.

There are particular needs around assessments, flexibility and targeting, engagement, and so on; also, around providing teachers with high-quality resources. Teachers in studies such as Arvind et al. (2021a) were positive about the potential impact of Maths Box, as a resource for teaching. Also, it might be that high-quality resources can support teacher confidence and reduce workload in an area where there are fewer dedicated programmes and finding specialist English and maths teaching expertise can be a challenge. Overall, technology seems to have potential as part of high-quality provision, but the evidence is limited in its ability to support any specific tools in the context of post-16 resits at present.

4.2.4 Learner needs, backgrounds and experiences

A major theme throughout the desk review and fieldwork was the importance of developing practices that are informed by understanding and supporting learner needs, backgrounds and experience. Some of this related to learner needs found elsewhere in the literature, such as the needs of socioeconomically disadvantaged students or those with English as an Additional Language (e.g., in Rahman et al. 2021 and Higton et al., 2017).

The literature provides several good accounts of the context and challenges of post-16 resit courses (e.g., Noyes and Dalby, 2020) that identify considerations related to learner needs and backgrounds. Consideration of learner needs and backgrounds led to teachers adopting a range of strategies to address them. These included:

- developing a contrasting learning experience from that of school
- creating a classroom culture in which students feel included and safe
- building positive relationships with individual students
- pedagogical adaptations to meet the learning needs of individuals and groups (Noyes and Dalby, 2020).

Teachers reported a need for frequent adaptations to meet the needs of different groups and of individuals within groups. These adaptations aimed to address affective issues, motivations, personal interests, knowledge gaps and vocational connections.

Supporting motivation and engagement

In our fieldwork, the majority of interviewees expressed views about both the general barriers to learning that young people undertaking resits tended to face, and those specific to the resit process (including the challenge of how students respond to the 'failure' of their original GCSEs). However, our interviews unearthed very few approaches that tackled these non-academic barriers, singularly or systematically, for these particular cohorts of students, and thus inevitably had limited evidence of effectiveness that might recommend them for scaling up at this stage.

One exception exists, relating to a provider who made extensive use of coaching, including peer coaching, and for whom a core priority was framing GCSE lesson content in ways that learners felt related to their own life experiences. This provider has taken a number of steps to develop and evaluate this model of support, with promising results across multiple post-16 providers where it has been implemented. It seems likely that this is not a unique situation, and that other comparable models of specific support for resit learners' particular needs exist in pockets around the country.

The main focus of discussion around learners' needs in the literature was the goal of developing or improving student motivation and engagement, which are often identified as 'stepping stones' to improving attainment. Several studies offered practices to increase engagement with resit courses. Characteristics identified by students as being particularly helpful in supporting engagement were that they provided good revision and recap approaches, covered a range of relevant topics and supported the development of new skills.

Another common practice related to motivation identified in Higton et al. (2017) was aligning goal-setting with learner interests, especially for learners aspiring to further educational destinations (e.g., higher education) beyond their post-16 courses. Addressing learner engagement and motivation also related to challenges around attendance. Identifying positive and effective approaches to improving attendance and attitudes is consistently seen as important (see the interviews with leaders in Higton et al., 2017). Similarly, the studies from

Scandone et al. (2020) and Groot (2018) are addressing wider aspects of motivation in relation to attendance rather than teaching and learning directly.

Other examples of approaches in this area linked to providing student support, such as the positive effects of mentoring found in Van Effenterre (2017) and coaching being linked to improved confidence and perceived improvement in maths in Sharp (2021). Many such interventions were seeking to improve attainment indirectly through addressing issues around attitudes, attendance, motivation and engagement. There were also studies suggesting that teaching strategies were also being adapted or selected in light of adverse learner histories.

Low-stakes testing was a topic that came up in some of the smaller action research projects (particularly in maths) and linked with learner emotions and attitudes. As well as being an effective learning strategy (i.e., a form of retrieval practice), the low-stakes nature of these tests was emphasised as needed because of and in response to negative prior testing experiences. Topics like maths resilience and anxiety (e.g., Cutt, 2019; Hanlon and Wheeler, 2021; Johnston-Wilder et al., 2015) and aspirations, motivation and engagement (e.g., Anderson and Peart, 2016; Bruce et al., 2021a; Sharp, 2021) all form a significant part of the literature for post-16 resit learners and seem to be important considerations in current thinking about how to address barriers to learning for post-16 resits.

4.2.5 Policy, organisation and leadership

Issues relating to access to teaching expertise

Teacher supply

A recurring theme in both the literature and fieldwork was the importance of teacher supply, expertise and its development. Although there is no empirical evidence for this for resits, there is a common view that maths and English teaching specialism is an important factor. Teacher supply is therefore a crucial issue that has implications for policy and practice. Noyes and Dalby (2020) identify teacher supply as being a key issue. CUREE's (2014) study found that under half of maths and English teachers have a qualification above Level 3 and more recent evidence from the ETF (2022) describes similar issues in the current teacher workforce. Multiple interviewees in leadership positions stated that in FE it is difficult to recruit qualified teachers, particularly in maths, and as a result, many practitioners in FE do not have formal teaching qualifications. This issue is compounded by the lower rate at which teachers in FE are paid, making teaching in a primary or secondary school much more attractive.

CPD for teachers without English/maths teaching qualifications

Given the present shortage of maths teachers, this poses a particular challenge for many post-16 settings. This suggests a need to also think specifically about training for teachers who do not have a background speciality in maths/English, or who are teaching it alongside other subjects. Teacher CPD needs are therefore variable and related to subject and professional backgrounds. Professional development for teachers, including professional development in the specific content area, seems to be a need for improving practice for post-16 resits (Maughan et al., 2016). CUREE (2014) also identifies subject-specific expertise and its

development as an area for focus. Again, this connects to other strategies and interventions designed to improve outcomes. Studies such as Taylor et al. (2019) highlight CPD as an aspect that needed more development.

The fieldwork did not uncover more granular detail about approaches to teacher development that were linked to consistent improvements in outcomes for GCSE resit learners. However, many institutions placed a strong emphasis on the value of staff CPD that connected practitioners to interventions and wider teaching expertise, with the CfEM being mentioned by several as a powerful mechanism for providing staff with rich professional knowledge. They emphasised this even while acknowledging the challenges they face in successfully providing quality CPD.

One sector leader argued that there is a strong need to invest in providing training on a national scale to specifically upskill practitioners supporting learners with their GCSE resits. They suggested that the CfEM could form the core of a training approach that could be scaled up effectively in this way.

Leadership support and CPD

Planning for workforce development

Many of the challenges around teacher support and CPD needs feed into leadership thinking and practice (CUREE, 2014; Noyes and Dalby, 2020). In the interviews with leaders in Higton et al., leaders encouraged longer-term strategic planning in relation to staff and more generally. This is related to developing a strong workforce as well as deployment. Leaders preferred to deploy experienced teachers with suitable qualifications to resit students, but this can be a challenge due to issues of funding and the availability of staff locally. Participants reported several methods they used to improve recruitment, such as retraining teachers or ‘golden hellos’, which may be worth considering as part of a more holistic conception of approaches to supporting improved attainment for resit students.

Organisation and intensity of resit programmes

Other considerations for leaders being raised in the literature include questions about organising resit timetables and assessments. There are different models and lengths of resit courses currently in use. Post-16 resit learners have very different starting points and there appears to be value in identifying those who are already close to passing compared with those who are not, and organising courses accordingly. Some students with intensive input early on might successfully resit while others need more support over a longer period, and there is a need to have structures to support identifying and distinguishing between the two groups, and strategically target resources to each. Leadership practice on this seemed to vary. Higton et al. (2017) found that most providers use ‘levelled’ (broad attainment-based) groupings for teaching rather than mixed-ability teaching. Evidence does suggest that part of the issue is the amount of teaching and learning time devoted to the resits. Maughan et al. (2016) found that increasing the time spent learning maths to be effective in improving attainment.

In contrast to findings about the prevalence of broad attainment-based groupings from the desk review, the only grouping-related comments from fieldwork interviewees were about their use of and support for mixed-ability grouping. There is potential to explore this further to understand the dynamics at play – it is possible that this is a coincidence. But it might also indicate something about practices specific to comparatively high-performing settings, and/or that resits can be considered to be a 'pre-grouped' domain of practice. At present, the evidence is too thin to provide clear guidance on these differences.

Collective efficacy

One final consideration linking back to the attitudinal and motivational aspects discussed above, and connecting to leadership, is the perceived value of an ethos of joint responsibility for and shared valuing of the maths and English resits from all staff (Higton et al., 2017; Noyes and Dalby, 2020). As discussed earlier, Noyes and Dalby's (2020) analysis of policy and practice in FE describes the leadership and management of maths as a whole-college responsibility. They mention the importance of maths and vocational staff working together with joint responsibility. One inference that could be made from the literature is that there is a role for leaders and teachers for positioning the resits as an important part of the post-16 provision, and conveying their value to the learners, often as a challenge to prevailing learner (and sometimes staff) perceptions about the space and value of the resits within the overall curriculum.

4.3 Conditions and challenges for effective provision for post-16 resitters

Key questions for this section:

- *What are the specific challenges learners face in successfully studying and succeeding in resits? What are the specific post-16-related factors that influence these challenges?*
- *What are the specific challenges that post-16 practitioners face in applying their pedagogical knowledge to support resit students? What if anything is unique or common to this cohort of practitioners (in comparison with secondary school teachers) and do any particular CPD needs arise from this?*
- *What are the specific challenges providers face in supporting resit learners in English, maths or both? What are the specific post-16-related factors that influence these challenges?*

Based on the picture emerging from this review, post-16 GCSE resit provision appears to exist in quite a liminal and uncertain space, for both learners and practitioners. Post-16 resit learners are nearing adulthood, have increased independence, and yet are required to re-engage with a subject that they have been 'unsuccessful' with during their school career. The post-16 settings often provide different structures, curricula and teacher–student relationships from those typically found in school, and while many students thrive in this environment, for others this transition can be challenging. Further, English and maths GCSEs in post-16 settings are not necessarily viewed as 'priority' subjects in the same way as they are in secondary schools, and thus there is less support and resources available for their provision. The challenges facing providers as a result of the particular needs of students taking resits, the educational context and policy issues are discussed further in this section.

4.3.1 Challenges related to students

Categories of challenge commonly present among resit students

Pupils with SEND and pupils from disadvantaged backgrounds are over-represented among students undertaking resits. Furthermore, for reasons including entry requirements for courses in school sixth-forms, GCSE resit students are most commonly found in FE colleges (DfE, 2014). Many of these students become commuting students in a new educational environment, and all of them are studying English and/or maths GCSE because it is mandated whereas they have choices for other components in their study programmes.

Interviews with leaders by Higton et al. (2017) identified a greater need for support for EAL students and students living in rural areas. Students at risk of becoming NEET also might require additional support, with this delivered in a way that makes learning interesting and allows students to be involved in decision-making (Bielby, 2012). While the majority of students resitting have attained a Grade 3 in their initial examination and efforts are being made to support students to a Grade 4 (DfE, 2014), clearly there are challenges in this including students' own backgrounds and prior learning experiences. Some of these factors are associated with lower attainment throughout the schooling system, not just in post-16 contexts, and so it is important to consider how these students' needs can be most effectively met in this new context and at this stage of their educational career.

These observations are borne out by both practitioner and student perspectives gathered within the fieldwork. The differing nature and needs of post-16 study environments and programmes was raised as a barrier to progress by multiple practitioners. However, learners themselves – with one exception – felt strongly that the independence they have is a strength of FE and that it enables them to develop stronger relationships with their tutors.

For resits, this was reported as leading both to additional work from practitioners to bridge expectation and skills gaps, and to greater cognitive and engagement barriers faced by students themselves. This last challenge is further complicated by the fact that students studying for resits are expected to engage with a familiar (but generally disliked) programme of learning in an unfamiliar learning environment.

Students' prior learning and progress relevant to resits

At the outset, one challenge is the availability of information on students' prior learning and their knowledge gaps. Information to providers from students' schools may vary in quality and quantity, so it is a challenge for providers to identify students' needs. Good diagnostic testing as a strategy to support this initial information collection and to identify learning needs is recommended (e.g., Maughan et al., 2016), but not universal (Ofsted, 2022). As mentioned earlier, there have been attempts to develop and trial good diagnostic assessments in post-16 contexts such as Taylor et al.'s (2019) trial of Assess for Success, but as yet these have not been ready to scale up. Getting to know students' needs so that teachers can adapt their pedagogy to suit and creating good staff–student relationships are important to both students and staff (Anderson and Peart, 2016; Noyes and Dalby, 2020; Robey and Jones, 2015), but at present how to do this is not fully evidenced in the literature.

This again was a theme borne out by interviews with practitioners. The challenges posed by transition to a new educational phase and the lack of clear and accessible infrastructure to support the sharing of information about students between the different phases were described as significant challenges to be navigated by multiple interviewees. Although these are challenges that participants can and do take active steps to remove, it was clear that practitioners focusing on resits are given limited systematic support to understand the needs of their students. This is particularly striking given that it seems reasonable to expect that these students will have been identified as being at-risk of underperformance in the school system prior to taking their GCSEs, and that their schools should therefore have, if anything, more information regarding their progress and needs than the wider cohort.

Factors hindering students' motivation and engagement

From the topics of interest particularly in action research projects, we can also infer that wider outcomes feature strongly in providers' thinking around challenges. Examples of these wider outcomes are poor attendance, low motivation and a lack of engagement for the students who are undertaking GCSE resits. Practitioners taking part in the studies explored for this work consider strengthening these outcomes during the course of their studies as a means of improving attainment (for example, Arvind et al., 2021b; Fremlin, 2021; Gunduz et al., 2021). Indeed, given these students are more likely to have persistent absence, to incur behaviour sanctions and have already experienced 'failure' in their pre-16 contexts, these perceptions are not without foundation. Maths anxiety and students' self-confidence were other characteristics that were of interest to action researchers (see Bruce et al., 2021b; Cutt, 2019; Hanlon and Wheeler, 2021). Further details of the specific interventions mentioned here can be found earlier in this chapter.

The fieldwork reinforced the view that students experience challenges in terms of their engagement with GCSE resit studies as a result of feelings of failure. Discussions regarding the challenges practitioners had to deal with in motivating students to pursue these courses were frequent, and dislike of the subjects based on a perception of failure was commonly expressed by the students we spoke to. The larger conclusion that is suggested here is that, although a great deal of energy has already been expended on identifying and trying to tackle this problem, how to do so successfully and consistently is not clear.

Perhaps surprisingly, behaviour was rarely mentioned in the database of studies from our desk review, but where it was mentioned, students said that they appreciated good behaviour management in their classrooms (Anderson and Peart, 2016; Robey and Jones, 2015). Students report valuing support networks from staff and peers. Difficulties in learning and in receiving staff and peer support were particularly highlighted during the pandemic and there seemed to be a preference for this to be in person rather than online (Lethbridge, 2021; Sharp, 2021; Van Effenterre, 2017). Support messages via text messaging also appears to have no overall effect on attainment or attendance (Groot, 2018; Scandone et al., 2020), so even where students have access, low-cost technology or software may not necessarily be an effective means of tackling such potential barriers to progress. Behaviour was more commonly raised in the fieldwork in the context of challenges related to practitioner development, and have thus been addressed more thoroughly in the next section of this report.

Specific challenges introduced/exacerbated by Covid-19

The Covid-19 pandemic highlighted many of the challenges discussed in this section for practitioners and particularly students, and many of our desk review studies were either initiated by or adapted to this. Accessing technology and other resources was mentioned across a number of studies as a barrier to student progress, as were distractions at home (e.g., Arvind et al., 2021a, 2021b; Bruce et al., 2021b; Graham et al., 2021; Gunduz et al., 2021; Lethbridge et al., 2021). During the pandemic, technology was the clearly favoured solution for continuing to deliver learning but it disadvantages those without the means to access it and those without a suitable learning space. There is also some indication coming from the fieldwork evidence that reinforces wider findings around the loss of general learning skills and/or understanding of the nature of standardised assessments (although this last issue is likely to be specific to a very narrow cohort). All of these challenges linked to the pandemic are likely to impact this cohort of students more than the general student population; while they are no less likely to experience them, they also face other challenges that are more specific to their needs and which have the potential to compound.

We also found evidence in the desk review that students who are pursuing GCSE resits prefer in-person support and teaching rather than online (Bruce et al., 2021b; Graham et al., 2021; Harrop et al., 2021; Lethbridge et al., 2021; Sharp, 2021; Van Effenterre, 2017), perhaps because of the issues with access but also because of the personalisation of face-to-face contact or students' level of IT literacy.

Multiple fieldwork participants spoke about the impact that Covid-19 had on their learners' studying for resits, painting a picture similar to what has been observed elsewhere in terms of widening attainment gaps and reduced capacity to stay on-task (EEF, 2022). Practitioners noted consistently that learners' understanding of and engagement with standardised assessments had been noticeably impacted by exams being suspended during lockdown.

Interviewees stated that they were seeing a marked increase in anxiety from their learners around assessment, both in advance of and subsequent to taking exams. This challenge is likely to be particularly acute when focusing on resit learners, who are already vulnerable in terms of mental resilience around maths and/or English. However, they also observed that their resit learners often lack basic awareness of how exams work. While this challenge is more easily addressed than the wider issue of compromised motivation to prepare for exams, the need to do so remains an obstacle to progress for this group of learners.

4.3.2 Challenges related to leaders and practitioners

Connecting qualified teachers and students embarking on resits

Nationally, there are challenges in recruiting and retaining teachers at all phases, and these are often exacerbated in FE settings, and particularly in relation to GCSE maths and English resits (ETF, 2022; Higton et al., 2017). Smith and Dalby (2021) suggested that a lack of planning when introducing the GCSE resit policy in 2014 contributed to difficulties in recruiting high-quality teachers and hence leaders' ability to make long-term plans for their own institutions.

How we attract teachers to the further, vocational and technical education profession is a question beyond the scope of this project, although we do know from the literature that there have been some attempts to mitigate this issue in post-16 settings, such as through golden hellos and bursaries. The number of staff available, classroom availability and student numbers will all impact local decisions on what a timetable can look like, and hence what the curriculum will look like; these decisions are left fully in the hands of leaders, without much guidance from policy as it stands (ESFA, 2022d; 2023a, 2023b). Furthermore, once staffing is in place, are the best teachers being deployed to GCSE resit classes, or are these classes the poorer cousin to A-level courses? Interviews with leaders suggest that while there is a willingness to deploy experienced teachers to GCSE resit classrooms, the realities of teacher supply make this challenging (Higton et al., 2017).

Providing professional development support for teachers working with students on resits

It is not just students who arrive at their post-16 providers with a wide range of backgrounds, experiences and needs: this is equally the case for their instructors. Teachers' needs in their professional development will also vary. How can and do institutions adapt to their needs just as we do with students? Do leaders have the capacity to do so given the nature of the post-16 workforce, since there is more reliance on temporary/short-term and part-time staff, and greater staff turnover? Ideally, subject knowledge from related qualifications would support student attainment, yet the need for teaching qualifications is ambiguous and under half of instructors do not hold qualifications above Level 3 in their subjects (CUREE, 2014; ETF, 2022). Across our desk review of database studies related to teachers and leaders, we found indications of practitioners' desire for access to good-quality CPD generally and for subject-specific CPD in particular (e.g., CUREE, 2014; Noyes and Dalby, 2020).

The fieldwork evidence supports this finding, but also articulates the barriers that providers face in organising the CPD, which is agreed to be crucial to supporting impact on student progress. While interviewees consistently spoke positively about the value they personally derived from CPD and the importance they placed on it, they were also clear about the challenges. These included comparatively straightforward (but still challenging to address) issues of resource availability, but also touched on issues of staff engagement and leaders' capacity to identify and commission good-quality CPD. The question of what CPD post-16 providers should commission raises another interesting tension between the evidence emerging from the desk review and the fieldwork. As noted above, in the desk review, behaviour management did not emerge as a dominating concern, whereas it was mentioned as a specific developmental need felt by many practitioners. This seems to us to imply that there is a specific Covid-19 issue emerging around behaviour, but also raises the possibility that there is a disconnect between the issues confronting practitioners who do and do not participate in research of the kind uncovered by the desk review.

Some efforts have been made to evaluate CPD programmes, but either this was on a small scale or the programmes needed further development (see Hopker et al., 2021; Johnson-Wilder et al., 2017; Lancaster, 2021; Taylor et al., 2019). Teachers also report that in addition to attending CPD, they benefit from time to develop and use the skills learned to improve their

practice, including confidence using IT products (Begum, 2021; Lister et al., 2021). It does appear that settings are also coming up with other ways to support staff development beyond training courses, with reported positive findings, for example, collaborative working and planning between colleagues and between GCSE subject staff and vocational departments (CUREE, 2014; Lancaster, 2021; Noyes and Dalby, 2020; Smith and Dalby, 2021). Benefits of this might include promoting a teaching and learning community as well as a consistency in delivery across colleges and institutions. Such strategies may be of potentially low cost but high impact, and teacher development might be an area for further consideration in future research.

Considering the resource pressures many post-16 providers are dealing with, it is noteworthy that many are finding alternative ways to support staff development beyond training courses, and some of these have reported positive findings – one example noted earlier in this report was bringing together staff with GCSE teaching roles and their vocational colleagues. These 'workaround approaches' may prove particularly powerful because of the comparatively strong impacts they can achieve for relatively low cost (if they can be organised well).

Challenges from curriculum and assessment requirements

Deciding the best approach on the delivery of the curriculum itself and its content elicits many potential challenges for education professionals. First, national curriculum content was already covered while students were studying towards their initial examinations, but students did not attain a Grade 4 at this first attempt. At post-16, students will have a wide range of interests and subjects they are pursuing in their study programmes. Various strategies to make the resit curriculum more post-16 appropriate for learners were mentioned in our desk review, including contextualisation, 'real life' problems and employer-sponsored curricula (e.g., Eardley et al., 2018; Hough et al., 2017; Runge et al., 2019). However, Runge et al. (2019) also describe the application of contextualised or 'real world' knowledge to GCSE content and exams as challenging.

Furthermore, there are some indications that functional skills curricula are perceived as being more suitable for vocational students, but that such qualifications are overlooked as GCSEs are more beneficial for those aspiring to enter higher education and for employability (Dalby and Noyes, 2022; Lloyd, 2021; Smith and Dalby, 2021). Regardless, for students who previously attained Grade 3, there is no choice in which qualification they may study (Hancock, 2014). Many of these studies were initiated as a means of exploring how curriculum and pedagogy can work in tandem with wider outcomes such as motivation, and this is a challenge for practitioners. Reinforcing the picture that there are considerable challenges to be overcome in building an effective 'two-track curriculum model', fieldwork participants were generally dismissive of functional skills as a viable alternative route of study for students taking resits. Interviewees cited a belief that functional skills qualifications are of little value to employers due to being perceived as of lower status and quality than GCSEs while also being, in the practitioners' views, too difficult, and thus not a suitable alternative, for the learners in their resit classes.

Mediating teaching through technology, post-pandemic

During the Covid-19 pandemic, transferring teaching online required quick solutions from instructors (Graham et al., 2021; Lister et al., 2021). This lead to many action research projects being initiated or adapted to support in-house evaluation. However, findings have been mixed, emphasising practitioners should carefully consider implementation where online learning is needed. Some more common practices from pre-16 contexts were also represented in the literature, such as maths mastery. These practices are detailed earlier in this chapter, but applying these often well-evidenced strategies appropriately in the post-16 context is also a challenge for educators; these practices may be trialled and tested at pre-16, but they are not used extensively in a post-16 context. Introducing any interventions, whether pedagogical or for wider outcomes, without the commitment of all interested parties may lead to difficulties (Groot, 2018).

The best use of particular funding schemes may also be an area for further exploration in future. We know that institutions receive funds per student per subject to support GCSE resits (ESFA, 2023). In addition to this, funding related to post-16 resits, including the Basic Maths Premium and Tuition Funding, have either been evaluated or are currently undergoing trials (NatCen/EEF, 2021; Ofsted, 2022), and both of these schemes are intended to support curriculum and pedagogy. One financial method of support not included in our desk review is the 16 to 19 Bursary Fund. Students receiving eligible benefits, children looked after or care leavers can apply for 16 to 19 bursaries, and individual providers are also able to decide how to distribute discretionary bursaries to students who are not receiving this (Gov.uk, 2023b). The best use of these funds by students is untested, but colleges may be including students undertaking GCSE resits in this distribution. As with other factors mentioned throughout this section, decisions on how to use funding such as the tuition funding are local and context-driven, but again there is no evidence base at present to support this. Funding in further education generally is also a wider debate, which, while relevant, is beyond the scope of this review.

4.4 The overall evidence base

Key questions for this section:

- *What are the areas of strength and weakness in the evidence base for post-16 resit practice and interventions?*
- *How does this vary by subject, context and research type?*
- *What might be learnt from evidence from the pre-16 phase?*

4.4.1 Strength/limitations of the evidence base

Overall, the evidence base to support GCSE resits can be characterised as extremely weak in terms of understanding approaches that have impact on students' attainment. This can be attributed first and foremost to a very limited number of studies overall, and a similarly limited number of methodologically robust evaluations. There are other factors that compound this underlying challenge.

The sector suffers not just from a lack of evaluations, but also a lack of clear, developed and relevant programmes to test in the first place. For example, a number of pilots have not gone

any further despite being identified as candidates for continued development. There are therefore important questions about how the pipeline can be improved/supported for post-16 contexts.

Beyond the low volume of studies of any kind, there is also a clear imbalance in terms of the type of studies/subjects and foci, and a strong bias towards studies with a small number of participants in single providers/classes. For example, the desk review team found 30+ studies from the CfEM that consisted of action research projects, in comparison with a single study defined as high security in terms of evidence of causation.

There is growing interest in action researcher, practitioner-led research and the approaches explored through these, such as those generated via the CfEM. But there is also further work needed in this area, and the question of how this can be joined up and made more rigorous and valuable in terms of the wider evidence base is still an open one.

Some studies highlight the voices and perspectives of FE leaders – this is important and useful for learning about practices and informing what is worth developing/exploring further. In addition, collaborative action research, such as that seen in the CfEM projects, provides an idea of the kinds of topics/practices that maths teachers want to research and learn more about. These may be indicative of wider interests (where their areas of interest move beyond focusing on curriculum content). There may be a strong rationale for better-quality, more independent, more focused student 'voice' research on experiences and perspectives of post-16 resit work, transitions, barriers and support.

4.4.2 Subject foci

There is a clear imbalance between maths and English subject-focused provision. On first glance, most of the work we have found focuses on maths, although it is worth noting that this is skewed somewhat by the 30+ pieces from the CfEM programme, a radical outlier in terms of the volume of material produced. Even acknowledging this caveat, there does seem to be evidence that there is significant investment in maths provision and support. Remaining questions include:

- Where are these networks, support systems and resources for English?
- Would focusing on identifying, supporting and building on them have positive effects for attainment?
- How can this be facilitated? (The team note that these do exist at pre-16 level for English, e.g., English Hubs, but there is a push there for phonics etc and it is schools focused. Therefore it is not a simple matter to expand them into post-16.)

4.4.3 Learning from the pre-16 phase

The team found some evidence that there are practices that are being transferred/attempts to adapt them from pre-16 to post-16, such as cognitive science elements. These approaches have been trialled in their original pre-16 context, but not in post-16. The evidence from pre-16 is schools-based, but the majority of students undertaking resits have historically been based in FE – the Department of Education found in 2014 that 54% of students without A*-C

in English and/or maths went onto study in FE colleges, compared to 20% in schools and less than 8% to other types of provider (DfE 2014). It is therefore not currently clear from the wider evidence what specific differences exist and how they are significant for understanding the nature of post-16 teaching and learning. More context-driven and theoretically grounded research into practices is needed, to understand why certain practices/interventions would/should work with post-16 students.

Understanding and supporting the transition between school and post-16 provision is a generally under-theorised and under-researched area (although see Lupton et al., 2021 for some important work in this area). It is, however, potentially vital for understanding why many students do not achieve well in their GCSE resits and for developing approaches for tackling this.

5. Conclusions and recommendations

5.1 Conclusions and key findings

5.1.1 The current state of, and next steps for, interventions to support resits

It is clear from our review that more work is needed in the development phase of post-16 interventions, which specifically considers how contextual and practical factors, as well as principles derived from wider evidence, might influence design and delivery. The findings indicate that careful consideration and understanding of the *post-16* nature of the learners, contexts and assessments, as well as the fact that students are repeating examinations, are required here. There are multiple differences between pre- and post-16 provision, and the evidence uncovered through this review reiterates that these need to be considered in the development and implementation of approaches and interventions to consistently improve outcomes for students taking resits.

In particular, the speed with which the resits policy was introduced, and the drive in post-16 to move quickly and address emerging issues directly, may pose challenges to addressing long-standing persistent issues of the kind that GCSE resits represent. Therefore, attempts to systematically address the design and implementation of support require additional emphasis on adopting cumulative and experimental strategies, relative to approaches designed to address other aspects of post-16 outcomes.

Although there is widespread recognition of the importance of formative assessment and a broad array of practices, systems and ideas in use to enable assessment for learning, no clear trends emerged in our review in relation to any particular techniques, tools or systems of assessment that colleagues are engaging with at this stage. The evidence base at present is not broad enough to support attempting to develop a typology of strategies for developing formal assessment systems, but if this were to become common practice in a wider array of post-16 providers, it would support the evaluation and development of formative assessment systems for GCSE resits at a larger scale.

5.1.2 A set of principles for effective intervention design

The evidence about curriculum coverage and focus, and a tendency to opt for *either* a targeted *or* a core curriculum approach, have implications for how to successfully design interventions for resits. Based on our observations, the most successful approaches combine both; they are not designed to simply re-deliver GCSE courses. Instead, they take a position on:

- how to identify gaps in knowledge
- how to overcome barriers previously encountered
- how to revise and recap prior (but not necessarily secure) learning
- what common/core knowledge is needed for all resit learners irrespective of individual starting points.

At present, remedial or catch-up programmes seem to have mixed success, suggesting more clarity is needed in this and other areas about what is most effective for post-16 resit learners in GCSE maths and English.

5.1.3 Emerging lessons relating to specific teaching practices

At present, pedagogical development is an important but relatively poorly understood (by researchers as well as practitioners) domain within the post-16 sector. Therefore, evidence on effective pedagogy from other phases and subjects appears to offer an important 'sense check' and foundational stage for understanding and supporting post-16 resit pedagogy. The review has highlighted examples using relatively well-established, evidence-informed principles related to formative assessment, cognitive science (e.g., spaced learning) or mastery approaches. While the transfer of these into post-16 contexts is potentially promising, we need to know more about how these principles and practices can be effectively adapted and translated into post-16 resit contexts.

5.1.4 Systemic challenges relating to learner needs

Links between academic and social challenges

The literature and evidence collected from our review point to the need to consider learner needs and adverse prior experiences of learning. Beyond this broad goal, the evidence points to the importance of focusing on resit learners' specific needs and identifying how to address them in ways that improve attainment. There are also some more direct implications for considering the curriculum and pedagogy for these learners as part of intervention design and rollout. However, there is an open question about how discrete problems and strategies to address them can be. There certainly seem to be inter-linked factors, but whether it is best to address these in more holistic or multi-faceted programmes is unclear.

There is a danger that strong academic programmes might fail if socio-emotional aspects are not considered. It is important to also note that socio-emotional strategies still require effective curriculum and pedagogy to have the desired academic results. The evidence appears to strongly suggest that success for post-16 resits, perhaps to a greater degree than in Key Stage 4 teaching and learning, requires the effective integration of academic and socio-emotional approaches.

Support within and beyond the classroom

At present, we have little robust evidence specific to post-16 resit contexts on what effective support for these students both in and outside of the classroom could look like, but it does appear that evaluating how to improve wider outcomes would be of benefit to students personally and educationally. Deciding how to create a safe learning environment, which recognises that many of these students are now based in colleges and on their way to adulthood but still under the age of 18, is an interesting question; the 'post-16-ness' of the provision is nonetheless something which students report is important to them. This is also a potential challenge for researchers to meet in designing studies that are post-16-friendly.

The links between engagement and attainment

It appears that more holistic approaches that simultaneously tackle academic, social and emotional issues may be growing stronger as an area of development. However, in terms of

what light this sheds on possible investments in practices, there is a challenge relating to understanding impact on engagement and attainment – the causal chains of impact when evaluating interventions focused on motivation and attainment in combination with each other are difficult to disentangle. As a result, we are unable at this stage to do much more than identify this as an area worth investigating and developing further in the future.

5.1.5 Systemic challenges relating to practice and leadership

Workforce challenges

Our interviewees felt that the ability of FE institutions to recruit a highly skilled workforce was the biggest barrier to ensuring that learners are receiving high-quality teaching. CPD was seen by many as vital in bridging this gap, as it equips teachers with the skills to provide learners with effective support to pass their GCSE resits, regardless of their own prior level of training. The team did not uncover much detail about approaches to teacher development that were linked to consistent improvements in outcomes for GCSE resit learners. However, many institutions placed a strong emphasis on the value of staff CPD which connected practitioners to interventions and wider teaching expertise, with the CfEM being mentioned by several as a powerful mechanism for providing staff with rich professional knowledge. They emphasised this even while acknowledging the challenges they face in successfully and consistently providing quality CPD.

Question of the basis for greater local decision-making

The ability to make local and context-driven decisions is valuable, but there is no obvious research-supported model of good practice on which leaders can base these decisions. As a result, they frequently have to make decisions with limited information and which are heavily shaped by the resource limitations they face, as well as the learning needs to be addressed. It is not automatically the case that granting greater decision-making autonomy to leaders in local contexts will enable the removal of barriers to learning for learners taking resits if these barriers to progress remain. This is not to say that greater local decision-making would not be valued or have potential benefits, but it does not appear to address the major barriers faced with improving resit outcomes.

Bridging gaps between aspirations and starting points

All of the challenges facing leaders and practitioners contribute towards a disparity between expressed preferences or ideals, and what is currently achievable in practice and evidenced in research literature. Despite these challenges, there are clearly efforts at grassroots level to provide the best possible provision for GCSE resits. We have already discussed many examples of interventions that have been reported in the literature, and the efforts of practitioners to conduct action research. Developing such steps further and increasing our understanding of the post-16-ness of the issue (in pedagogy and contextually) will be beneficial to improving outcomes.

The bigger picture regarding leadership and resits

Overall, the benefits for learner progress of high-quality leadership that is specifically focused on resits are compelling, but difficult to evidence in the context of a review focused on practice. There are clear contributions leaders can make, both at the practical level and in terms of setting a vision of success and communicating that resits are a priority to all staff, which pertain to the other sections of this report. Overall, the main recommendation emerging from reflecting

on how providers approach the leadership and organisation of resits relates to prioritising and resourcing the development of an infrastructure that seeks to support resit learners in a holistic way, addressing both learning challenges and wider wellbeing challenges together wherever possible.

5.2 Recommendations

Our key recommendation is that, building on this review and the current funding round, the **EEF should sustain and grow its focus on post-16 English and maths for low-attaining and disadvantaged learners – including, but not limited to, GCSE resits**. The persistent underperformance of resit learners coupled with the relatively poor evidence base on interventions in this space reaffirm the rationale for investment, which, in terms of outcomes, could lead to sustainable, systemic change and improvement.

The team have identified three categories of recommendations:

- **research** to better understand the context and conditions under which teaching and learning happen for lower-attaining post-16 learners
- **intervention development and trials** to generate a more robust evidence base about the impact of particular practices and interventions
- **support and resources** to improve the generation and use of evidence among post-16 practitioners and institutions.

5.2.1 Research

Possible research questions that the team have identified include:

- What do we know about creating more effective transitions between secondary schools and post-16 institutions for lower-attaining students?

- What explains, and what strategies best address, low attendance or drop-out risks for post-16 GCSE resits or Functional Skills courses?

- What choices do post-16 institutions make about the organisation of GCSE resit learners (for instance over: ability grouping; timetabling; and connections with vocational courses), and how do these choices impact on outcomes?

- How do providers construct and deliver curricula that support learners to both engage and succeed in GCSE resits?

- What are post-16 institutions doing to develop, embed and evaluate meaningful diagnostic assessment approaches for GCSE resitters, both at the outset of learners' post-16 resit studies and throughout their studies?

- What do we know about the characteristics and capacities of the (highly heterogeneous) post-16 English and maths teacher workforce, and what are the implications for the ways in which these teachers are developed and supported to improve their teaching and their

use of evidence?

5.2.3 Intervention development and trials

The current EEF post-16 funding round will reveal some approaches and areas for potential investment and evaluation. Our study has highlighted that significant work is needed in the development and piloting of new post-16 interventions. The post-16 contexts need to be taken into account at every stage of this development and research pipeline, including in relation to specific methodological challenges (e.g., the potential for higher attrition rates).

Locating and developing interventions for post-16 resits are also likely to benefit from looking at successful practice in surrounding contexts. This review recommends consideration of interventions from the following two areas, which might not naturally emerge from focusing on current practice in the post-16 resit space or from funding rounds:

- **Vertical transfer**: Identify promising pedagogical practices for learners at Key Stage 4 and invest in programmes that 'transfer and adapt' these practices to post-16 resit classrooms.

- **Horizontal transfer**: Identify promising pedagogical practices from vocational and academic post-16 courses for lower-attaining or English for Speakers of Other Languages (ESOL) learners that are used more generally (i.e., not specific to resits) in FE colleges and other settings, and invest in programmes that 'transfer and adapt' these practices to post-16 resit classrooms.

Several studies that we reviewed and conversations we had with practitioners suggested a perceived benefit of interventions that address learning behaviours/barriers in addition to the core academic focus (e.g., also aiming to improve attendance and engagement). Another possible line of intervention development, therefore, is to consider approaches that address both academic and wider outcomes.

- **Multiple-outcome/combined interventions**: Invest in programmes that deliberately and rigorously blend a small number of interventions (e.g., one teacher-led academic focused; one ed-tech focused; one pastoral focused), testing how these interventions can combine to provide holistic support for improved outcomes.

The review team also considered approaches linked to specific contexts and their needs. We include the following suggestion for an intervention type here but note that, unlike those above, this is not tied to specific findings from this project, but rather emerged from wider conversations and thinking about interventions, their development and capacity building in general:

- **Collaborative, place-based interventions**: Invest in local change approaches to improving English and maths for resitters, where the EEF funds a coalition to bring together a small range of well-evidenced and well-coordinated approaches and interventions for GCSE resitters in one or both subjects. This could, for instance, lever the resources of secondary school maths departments to collaborate with FE colleges.

Or it could take whole-locality approaches to parental or employer engagement in improving resit results.[1]

5.2.4 Support and resources

While some post-16 leaders and practitioners already use the EEF's existing resources to improve their understanding and use of evidence, it is unclear whether this is consistently the case across the sector. Additionally, the very different nature of post-16 institutions, leaders and teachers justifies a more tailored and widespread approach to effective knowledge mobilisation. Possible ways forward include the following:

- Extend and adapt the teaching and learning toolkit for a post-16 context, and promote its use among post-16 leaders and institutions.

- Invest in the extension of the remit of Research Schools, and in new Research Colleges, to extend and develop networks and professional learning communities; to support post-16 providers with evidence use; and to provide high-quality and subject-specific professional development. This should connect with and be informed by the existing support provided by CfEM.

[1] This is similar to the Right to Succeed 'backbone organisation' model, which has been especially effective in Blackpool on KS3 literacy, but with students across broader issues and age ranges.

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Appendix 1 – Detailed overview of methods for desk-based literature review

1.1 Methods

Here we provide an extended overview of methods used to locate, appraise and analyse the texts included in the literature review strand of this study. Below we outline: the search strategy and results; the inclusion and exclusion criteria; and the screening, mapping and analysis processes. We have drawn on systematic review methods throughout to ensure transparency and systematicity in our approach and reporting in relation to the searches, screening and analysis conducted.

1.2 Search Strategy and Results

Our search terms were developed through initial scoping of the academic, policy and practice literature. There was relatively little practice-focused research evidence available relating specifically to post-16 English and Maths GCSE resits in the UK. As such, and to ensure that we identified as much relevant material as possible, we made the decision to keep our search terms open and inclusive.

We carried out two separate searches of the academic databases (via Web of Science). The first included the terms relating to context (e.g., post-16, Further Education) and the term 'GCSE'. This first search therefore looked for the relevant context and course rather than specifying a focus on 'resits' specifically. We searched for the following in all fields (including title, abstract, keywords and full text):

(("post-16" OR "Further Education" OR FE OR college OR "post compulsory" OR "post-compulsory") AND (GCSE))

The second search focused on 'GCSE' and the 'resit' nature of the qualification. We ran the following search string, again on all fields:

(GCSE AND (resit OR "re-sit" OR retake OR "re-take"))

We had trialled combining these elements into a single search but were concerned that it potentially could lead to relevant pieces not being picked up where the courses being resits were not the focus or described as such. These broader terms and two-step search process led to a more sensitive search, albeit with a large number of irrelevant results and a need to remove duplicates arising from having two overlapping searches. We determined that it was feasible and valuable to take this inclusive approach and use eligibility criteria to determine whether individual pieces were of relevance in a screening process (see below for details).

In addition to the Web of Science databases, we conducted searches of Google Scholar and Google, using adapted versions of the terms above, to identify grey literature, including policy and practice research reports on the topic which may not be indexed in academic databases. For each of the searches conducted, we made initial assessments about relevance and – from the first 10 pages of Google Scholar and the first five pages of Google - we retrieved all texts that were deemed potentially related to the scope/focus of this review. As with the academic database searches, we aimed to be inclusive with this, with a view to assessing quality and relevance during screening.

In addition to the academic and grey literature searches, we hand-searched for references from an EEF-funded evidence review of interventions for improving English and mathematics outcomes for GCSE resit students (Maughan et al., 2016). A total of 31 references were retrieved from this source. During our searches and discussions with colleagues and the EEF, we were also aware of the work of the CfEM, a national improvement programme designed to support and facilitate improvement in maths outcomes for students aged 16-19 in post-

compulsory settings. In recent years, they have run an action research programme which has enabled teachers at FE colleges to conduct projects around various improvement-focused practices. A total of 32 research project reports were located on the CfEM website and were included at this initial stage.

1.3 Screening and Eligibility

The screening process consisted of three main elements:

1. An initial title and abstract screen for general topic relevance (i.e., post-16 GCSE resits)
2. A full text screen for general topic relevance
3. A full text screen assessing all eligibility criteria

Overall, a total of 340 texts were located via the searches described above. At the initial title and abstract screening for general topic relevance stage (1), records were removed if they were duplicates or deemed irrelevant. This stage resulted in 136 records being excluded, leaving a total of 204 records for the full text screening stage. The next stage (2) was to assess general topic relevance using full texts. We also located and removed a small number of further duplicates. The full text general topic relevance screening resulted in a further 56 records being removed, leaving 148 texts.

Looking across all criteria, we recorded a summary judgement for relevance using a 'Low', 'Medium' and 'High' categorisation and excluded any remaining studies which were deemed to be of 'Low' relevance. 'High' refers to texts which are reporting studies which have taken place in the specific context of post-16 settings and are focused on practices being carried out with GCSE Maths or English resit teachers or learners. 'Medium' relevance studies are those which include some of these elements but which are less specific in terms of context or focus. An example of this would be a study which reports working with vulnerable or disengaged learners in post-16 settings and which includes strategies used with these students, but which does not specifically refer to these happening within GCSE resit classes. Those with 'Medium' or 'High' ratings are included in the final set of texts while those with 'Low' relevance were removed after the eligibility assessment (below). The 'Medium' relevance texts, while not providing a direct focus on post-16 GCSE resit practice have been included as we felt that it was likely that they could contribute further to our understanding of the type, range and outcomes of practices being employed in post-16 contexts.

Alongside this process, we carried out an eligibility assessment of each study using the full text and applying all of the criteria detailed below in Table 1. To be retained, all studies needed to meet all criteria. The focus was therefore on the overall topic relevance of the studies and their potential to provide evidence relevant to the review aims. Note that we did not have eligibility criteria relating to methods other than the need for the study to be empirical (eligibility criteria area 7). Double screening was also carried out on 10% of the documents to identify areas of ambiguity and to ensure that all team members were applying the criteria consistently.

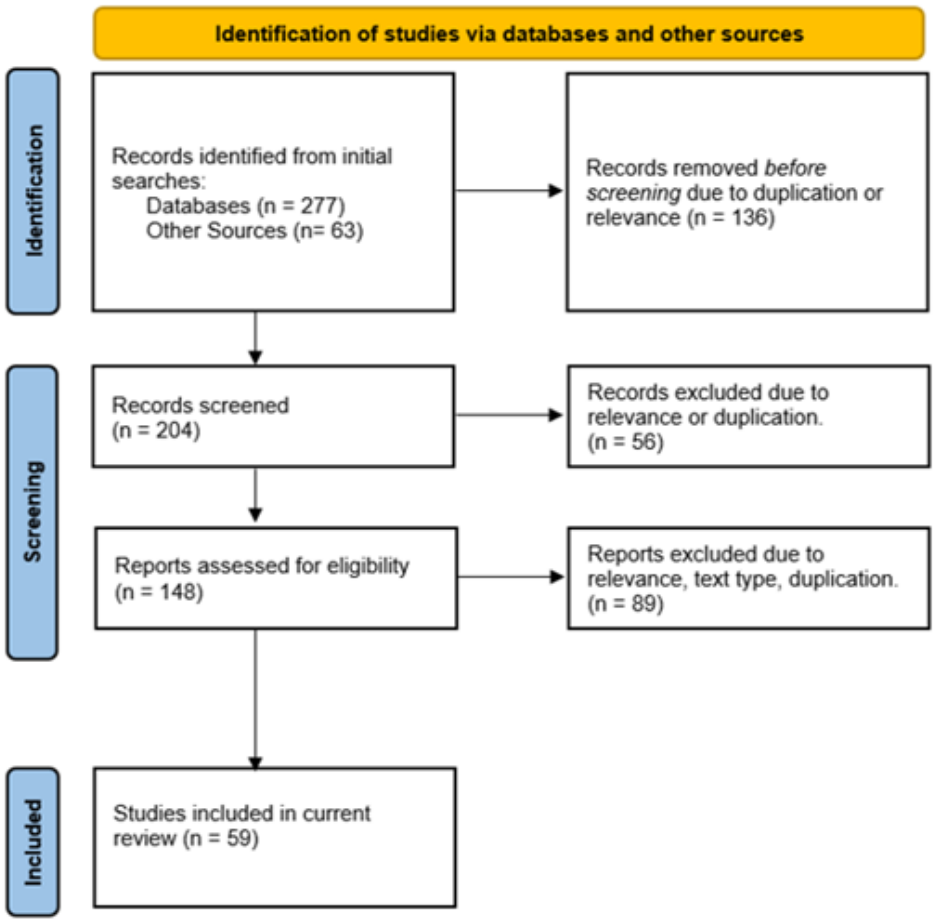
Table A1: Eligibility criteria used at the screening stage

Area	*Include/Exclude*
1. Date	***Include*** – Studies conducted since 2010
2. Language	***Include*** – Studies reported in English
3. Learners/ Teachers	***Include*** – Post-16 (age 16-19) learners engaged in (or potentially engaged in) studying for GCSE English and/or Maths ***Include*** – Post-16 teachers/tutors engaged in teaching/supporting post-16 GCSE resits
4. Context/Setting	***Include –*** Post-16 settings (FE colleges, sixth form colleges)
5. Practice focus	***Include*** – Any teaching, learning, professional development, social, pastoral or wellbeing approach, practice or intervention.
6. Learner and teacher outcomes	***Include*** – Any outcome related to the teaching and learning of GCSE English or Maths resits (academic, attendance, attitudinal, social, personal, employability, professional development).
7. Type of text/study	**Include –** Report of empirical study (including literature review) examining practice in post-16, GCSE resit contexts. **Exclude –** commentary/opinion or news pieces, statistical releases or analyses not related to practice, policy documents

At this stage, the size of the database was small enough to take a considered item-by-item assessment for eligibility and for borderline cases to be informally discussed by the team. Applying the criteria required some judgement, particularly in relation to the contexts of the studies, the extent to which studies were describing practice-focused activities, and whether an empirical research study was being reported (as opposed to more narrative accounts or policy-focused reports). While these were excluded for the purposes of the review analysis stage, we have read and retained all of these texts as they provide valuable context and perspectives around post-16 GCSE resit policy, practice and outcomes. Many of them are referred to in the earlier 'Background' section of this report.

After the application of the eligibility criteria, a further 89 reports were excluded, and we were left with 59 texts to be included in the final analysis. The PRISMA diagram, below (Figure 1), provides an overview of the full searching and screening processes described above.

Figure A1: **PRISMA diagram summarising the searching and screening processes**



1.4 Mapping, Categorisation and Analysis

The 59 remaining texts were placed into a new database and, for each one, we extracted and reported key information. This included the date, title and authors of each piece as well as the subject focus (English, Maths, Both, General/Unclear) and the design/methods used in the studies (e.g., literature review, action research, interviews, survey, mixed methods, randomised controlled trial). We also extracted brief information about key findings from each study and notable limitations which might affect how much 'weight' we attribute to these findings. An overview of all data extracted and recorded is provided in the next section.

After extraction of all key study details, we categorised the texts based on a) the overarching topics/themes that they were reporting on and b) the security of the evidence that was being reported. To inform the topic categorisation, we returned to some of the larger-scale, in-depth, general studies that we had consulted in the scoping stages of the study, and examined the themes and issues which were reported in those (e.g., Higton et al., 2015; Maughan et al., 2016). We also looked again at some of the recent commentary, identified through the initial searches, on the issues facing post-16 providers and learners in relation to GCSE resits. After a number of iterations, we selected five broad categories for organising the review analysis:

- Curriculum and Pedagogy
- Technology and Resources
- Learner Needs, Backgrounds and Experiences
- Teacher Needs, Supply and Development

- Leadership and Organisation

These categories were not designed to be discrete; indeed, we recognised that there would be substantial overlap between these topic areas and have reflected this in our mapping process. Accepting that many of the studies intersect across different foci acknowledges the wide range of practices and interventions, and that we have not specified particular outcomes. Where a text can be linked with more than one category, we have noted this as part of our mapping and have included it within each of the relevant findings sections. Table 2, below, provides examples of foci for studies included within each category.

Table A2: Illustrative foci for topic categories

Topic category	Includes approaches and interventions relating to:
Curriculum and pedagogy	- Teaching and learning practices - Curriculum organisation and delivery - Assessment practices (including diagnostic approaches)
Technology and resources	- Technology designed to aid or support teaching and learning (e.g., virtual learning spaces, apps) - Technology-led practices - Use of specific teaching/learning resources or materials
Learner needs, backgrounds and experiences	- Developing or supporting learners' engagement and motivation (including aspirations, attendance, participation, resilience). - Learners' personal characteristics or backgrounds (e.g., EAL or SEND status) - Learners' preferences or interests
Teacher needs, supply and development	- Identification of teachers' expertise/skills (and gaps) - Continuing Professional Development and Learning (CPDL) for teachers - Teacher supply (recruitment/retention) - Teacher training and qualifications
Leadership and organisation	- Leadership and management of GCSE resits in post-16 settings - Institutional-level organisation of resit delivery - Strategic development and oversight - Institutional-level funding and spending

Finally, we appraised each text for 'evidence security', giving a rating of 'High', 'Medium' or 'Low'. For the purposes of this study, evidence security refers to the strength of the evidence being presented. Key considerations were the robustness of the research design, methodological approaches and limitations, and the presentation and claims aligning to (i.e., providing warranted) outcomes/findings.

We produced three broad level descriptors for rating evidence security, as follows in Table A3:

Table A3: Evidence security ratings and corresponding criteria

'High' evidence security	- Rigorous evaluation or review (e.g., experimental/quasi-experimental or systematic review).

	- Usually carried out across multiple contexts or including multiple sources. - Conducted independently and using a form of robust impact outcome data. - Findings and conclusions reported, in detail, and with clarity and transparency.
'Medium' evidence security	- A moderately rigorous or wide-reaching evaluation, study or review. - Usually conducted across multiple locations or as an in-depth study in fewer locations. - Some degree of evaluation independence. - Use of impact/outcome measures. - Findings and conclusions are reported clearly.
'Low' evidence security	- A less rigorous, more descriptive or localised evaluation, study or review. - Generally, on a smaller scale. - Less focus on impact/outcome measures. - Conducted in a less independent capacity.

These descriptors were used on a 'best fit' basis to determine the evidence security rating. The evidence security categorisation allows us to make distinctions between the different pieces of research and the weight of the findings being presented and make judgements about which practices or interventions appear to be more or less promising in terms of the outcomes that they are seeking to achieve. It was important for the purposes of the review that we could assess not only what evidence is (and is not) available in this space, but also the extent to which evidence on certain practices/interventions is strong enough to inform recommendations for practitioners and policymakers. It is also helpful for informing where further research (such as that carried out by the EEF and other organisations interested in post-16 provision) might be useful.

It is important to note that the security ratings are not a determination of whether a piece of research is 'good' or otherwise, only how well it aligns and provides evidence for the purposes of this review. Much of the research we have reviewed has been conducted for different reasons and in different contexts and conditions. We have endeavoured to be as inclusive as possible in our reporting of the studies, and in our findings section we discuss all of the 59 studies. While many of the texts have been categorised with a 'low' evidence security rating for the purposes of this review, they remain helpful in their capacity to provide important insights into the varied and current practices being used with post-16 GCSE learners.

Overviews of key statistics relating to the characteristics of the database studies are presented in Section 2.2 of the main report. The studies are then discussed, under each of the five thematic category headings.

Appendix 2: Summary table of included studies

Reference	Subject	Method	Topic	Key finding(s)	Evidence security rating	Curriculum and Pedagogy	Technology and Resources	Learners' Needs	Teachers' Needs	Leadership and Organisation
Abbas et al (2021)	Maths	Action Research	Diagrams for teaching maths	Potentially helpful for students (grades 2 and below)	Low	ü				
Akyali (2019)	English	Action Research	Peer assessment - trainee teachers	Students felt positive about giving and responding to feedback.	Low	ü				
Anderson and Peart (2016)	Both	Interviews/focus groups	Students' motivation at college	Peer support and supportive learning environment important to students.	Low			ü		
Arvind et al (2021a)	Maths	Action research	Raising motivation through schemes of work ('Focus 4' from Maths Box)	Resources helpful and improved motivation. Barriers to home learning e.g., access to technology, distractions.	Medium	ü	ü	ü		
Arvind et al (2021b)	Maths	Action research	Engagement with online maths resources	Hegarty Maths was most popular with students. Barriers to home learning e.g., access to technology, distractions, low motivation.	Medium	ü	ü	ü		

Begum (2021)	English	Interviews/focus groups	Use of mobile phones in classroom (Otter and Kahoot apps)	Some positives, but teachers needed time to learn to use apps and more training.	Low		ü		ü	
Bielby et al (2012)	General/ unclear	Literature review	Strategies for young people at risk of becoming 'Not in Education, Employment or Training' (NEET)	Flexible approaches to teaching likely to be successful. Supportive environment and student ownership in decision making important.	Medium	ü		ü		
Bilby and Higgitt (2021)	Maths	Action Research	Impact of flipped learning	Completion of prior learning impacted attainment, but some differences between courses.	Low	ü	ü			
Bruce et al (2021a)	Maths	Action Research	Mastery maths to improve maths confidence	Potentially positive for students' perceptions of their confidence and ability.	Low	ü		ü		
Bruce et al (2021b)	Maths	Action Research	Technology to develop growth mindset	Mixed response to technology and to Teams. No mention of attainment. Further development of intervention required.	Low	ü	ü	ü		

Chatterjee-Woolman et al (2021)	Maths	Action Research	Problem-solving curriculum	Improved outcomes for in-year assessments but not final examinations.	Low	ü				
Cottam et al (2021)	Maths	Action Research	Improving engagement via various social media platforms	Students showed no preference for social media.	Low		ü	ü		
Couplan d et al (2021)	Maths	Action Research	Blended teaching via interactive software (GCSEPod, Mathswatch or Learn)	Potentially useful for blended learning.	Low	ü	ü			
CUREE (2014)	Both	Mixed methods	Review of research and survey of current practice	Teacher subject expertise and subject-specific CPD are ways to improve attainment. Building workforce capacity and leaders working together needed.	Medium				ü	ü
Cutt (2019)	Maths	Action Research	Low stakes testing in maths resit lessons	Students more likely to ask for help or answer questions in class. Improved exam anxiety but unclear on confidence.	Low	ü		ü		
Dalby and Noyes (2022)	Maths	Mixed methods	Comparing functional skills maths and GCSE maths	Preferences for functional skills curriculum for vocational students, but GCSE for employment.	Low	ü				

Eardley et al (2018)	Both	Survey/ Questionnaire	Employer-sponsored curricula for motivation (Peter Brett Associates and RES)	Students less likely to say a pass in GCSE would help gain employment. Students report improved motivation.	Low	ü		ü		
ETF (2020)	English	Action Research	Reading booklets to support teaching of unseen extracts	Positive feedback from both staff and students. Reduced lesson preparation time for teachers.	Low	ü	ü			
ETF (2022)	General/ unclear	Literature review	Review of FE teacher workforce	Descriptive information of teacher workforce.	Medium				ü	
Ozanne et al (2021)	Maths	Action Research	Coaching to improve maths performance	Use of coaches and personal feedback had a positive impact on confidence and attainment.	Low			ü	ü	
Fremlin et al (2021)	Maths	Action Research	Maths lessons outside the classroom	Students felt this improved their progress. They enjoyed the lessons and engaged more.	Low	ü		ü		
Graham et al (2021)	Maths	Action Research	Mastery teaching of ratio online compared to in class (multiple apps used)	Potentially useful but some skills difficult to transfer online and some may have difficulties in accessing e.g., due to IT literacy.	Low	ü	ü			

Groot (2018)	Both	RCT	Text messages sent to students' families and friends	Some positive impact on attendance and attainment.	High		ü	ü		
Gunduz et al (2021a)	Maths	Action Research	Increasing motivation using maths specialists as mentors	Positive impact on attainment and self-confidence (prior 3 grade learners)	Low			ü	ü	
Gunduz et al (2021b)	Maths	Action Research	Virtual manipulatives app on mobile phones	Claims positive results. Time needed to learn to use apps. Needs to be embedded not a standalone activity.	Low	ü	ü			
Hanley et al. (2021)	Maths	RCT	5Rs approach: Recall Routine Revise Repeat Ready	Potentially positive but second trial is planned.	Medium	ü				
Hanlon and Wheeler (2021)	Maths	Action Research	Mindfulness	Potentially positive for student anxiety.	Low			ü		
Harrop et al (2021)	Maths	Action Research	Blended learning	Majority prefer face-to-face teaching. Might be useful for resistant learners. Need to ensure students are IT literate and have access to technology.	Low	ü	ü			

Higton et al (2017)	Both	Interviews/ focus groups	Perspectives of leaders on effective delivery of GCSE resits	Effective approaches include diagnostic assessment and contextualised learning. Greater support needed e.g., for EAL students, students living in rural areas. Preference for experienced teachers. Timetabling important.	Medium	ü		ü		ü
Hopker et al (2021)	Maths	Action Research	Teachers' use of and fluency with technology (Century, Desmos, Padlet, Whiteboard.fi)	Teachers increased in confidence. CPD and reflection sessions were helpful to teachers.	Low		ü		ü	
Hough et al (2017)	Maths	Mixed methods	Realistic Mathematics Education - visualising maths processes through context/model-building	'Realisable' contexts and visual media used, but mixed results - some improvement in attainment in Number (but not Algebra)	Medium	ü	ü			
Ireland (2019)	Both	Literature review	Review of some factors affecting attainment/study of GCSE resits. Includes student	Recommends various pedagogical strategies and diagnostic assessment. Some positive evidence for effective use of technology. Student attitudes are a significant challenge. Good student support essential. Difficulties in recruiting teachers. Teacher CPD is important.	Low	ü	ü	ü	ü	

			issues, T&L, teachers' needs							
Johnston-Wilder et al (2015)	Maths	Mixed methods	Short course for developing mathematical resilience	Benefits of developing resilience for self-coaching and learning outcomes.	Low	ü		ü		
Johnston-Wilder et al (2017)	Maths	Mixed methods	Teacher development for maths resilience	Positive findings for 1 day training course.	Low				ü	
Kimeng et al (2021)	Maths	Action Research	Online platforms for engagement (Blutick, Centre, Nearpod)	Completing online quizzes via these platforms allowed real-time feedback, which improved engagement and attainment.	Low	ü	ü			
Lancaster (2021)	Maths	Action Research	Collaborative planning	Collaborative planning an opportunity to discuss teaching and learning. A teaching community and staffing levels have positive impact on teaching and learning.	Low				ü	ü
Lethbridge et al (2021)	Maths	Action Research	Blended learning	Students had variable experiences - some had difficulties, while others enjoyed the independence.	Low		ü	ü		
Lister et al (2021)	Maths	Mixed methods	Delivering maths online (various	Whole college teaching approach to online learning and teacher CPD needed. Teachers need time to explore the	Low	ü	ü			

			platforms including Teams, Padlet, Century, MyMaths)	platforms. Students need access to the technology.						
Lloyd (2021)	English	Mixed methods	Experiences of resit English students on vocational courses	Students aware that different skills are taught on vocational courses compared to GCSE, but they found skills on vocational courses more valuable and enjoyable.	Low	ü		ü		
Maughan et al. (2016)	Both	Literature review	Interventions to improve post-16 GCSE Maths and English	Mixed findings though some interventions with positive impact. Some positive evidence for use of technology to support students and diagnostic assessments.	High	ü	ü			
NatCen Social Research (2021)	Maths	RCT	Basic Maths Premium Pilot - additional funding per student (up to £500)	Study plan document – study not yet completed due to Covid-19	N/A					ü
Naughton et al (2021)	Maths	Survey/ Questionnaire	Team based learning	Positive response from students who found it enjoyable. Needs further development.	Low	ü		ü		
Nolan et al (2020)	Maths	RCT	Student centred, problem solving and dialogic approach to	Protocol document for ongoing RCT – findings not yet publicised.	N/A	ü		ü		

			maths post-16 (Maths-for-Life)							
Northampton College and Harlow College (2021)	Maths	Action Research	Maths Lab/Maths Clinic (small group support or coaching)	Generally positive response from staff and student respondents.	Low	ü		ü		
Noyes and Dalby (2020)	Maths	Mixed methods	Policy enactment and practice in FE colleges	Contrasting learning experience to school and pedagogical adaptations deemed effective. Contextual factors e.g., learner backgrounds and prior experiences influence attainment. Teacher supply is a national concern. Teacher CPD needs are variable. Staffing structures, timetabling, and joint responsibility for staff all important.	Medium	ü		ü	ü	ü
Ofsted (2022)	General/Unclear	Mixed methods	Perspectives of tutoring programme - good practice	High-quality tutoring aligned with vocational learning. Diagnostic assessments needed. Some weaker colleges did not have a strategy for promoting numeracy.	Low	ü				ü
Rahman et al (2021)	Maths	Action Research	Teaching key words/phrases in Maths for EAL	Positive attainment outcomes, though learners had higher prior attainment.	Low	ü		ü		

Raman et al (2021)	Maths	Action Research	Digital maths provision on engagement and motivation	Blended model works more effectively. Students expressed preference for Teams. Teachers more confident than previously. Use of chat functions aid student engagement.	Low	ü	ü	ü		
Ramsden et al (2021)	Maths	Mixed methods	Flipped learning tasks	Completing prior learning tasks improved student confidence.	Low	ü	ü			
Robey and Jones (2015)	Both	Interviews/focus groups	Factors influencing engagement	Behaviour, supportive environments, and peer support all important to students.	Low			ü		
Runge et al. (2019)	Both	Mixed methods	Contextualisation (using real life examples) in English and Maths	Significant changes needed to make intervention more effective.	Medium	ü				
Savage and Norris (2021)	Maths	Action Research	Student engagement coaches to improve motivation, engagement and reduce anxiety	Students reported being more confident and less stressed.	Low			ü		
Scandone et al (2020)	Both	RCT	Project Success intervention - Text messages	No evidence of impact of text messages on attendance or attainment.	High		ü	ü		

			to support and motivate students							
Sharp (2021)	Maths	Action research	Student coaching	Some positive evidence that confidence and perceptions of maths improved.	Medium			ü		
Smith and Dalby (2021)	Maths	Mixed methods	Maths resit policy and practice	GCSE is preferred qualification. Contextualisation more relevant to students. Teacher supply issues affect long term planning and CPD.	Low	ü			ü	ü
Stewart and Dobson (2021)	Maths	Action research	Use of starters to from KS1/KS2 maths to address gaps in KS4 understanding	Findings reported as positive but closer inspection would be helpful.	Medium	ü				
Taylor et al. (2019)	English	Mixed methods	Assess for Success - Diagnostic and formative assessment approach	Pilot study determined further development of intervention required, including of the CPD offered to teachers.	Medium	ü			ü	
Van Effenterre (2017)	General/ unclear	Literature review	Post-16 remedial/catch up approaches	Impact of remedial approaches mixed. Evidence of positive effects of mentoring. Face-to-face services better received than online.	Medium	ü	ü			

Wilberforce College (2021)	Maths	Action Research	Tone of feedback for maths assessments	Framing feedback positively may help students' motivation.	Low	ü		ü		

Appendix 3 – Fieldwork data collection instruments

Interview questions

Principals and Heads of Departments

Theme	Questions
Introductions	Check over consent What is your role? Can you tell us a bit about your setting? What kind of learners do you work with? Do you have any subject or curriculum areas of specialist expertise that you exercise in your role? Can you tell us a little bit about the learners characteristics that are doing resits?
Approaches to resits	**Understanding the overall model for supporting resits** How would you describe your organisational approach/model to teaching for GCSE Maths & English resits? What is it based on? Are there any specific aims you are trying to achieve besides improving learners' results in these exams? **Understanding where learners are at** How do you assess the learning needs and starting points of learners who have to take GCSE Maths & English resits? ● For example, do you have any baseline assessments that you have? ● Do you ask/receive any other information from learners' secondary schools? If yes, how do you use this data to inform teaching practice to support the learners journey? ● Do you have any examples of how this happens in practice? Do you have any systems in place to incorporate learner feedback into practice? ● If yes, what does this look like? **Specific teaching practices** What are the teaching approaches which you use in your setting which you have found have had a high impact on learner attainment in GCSE resits? ● Do you encourage (or require) use of established teaching models and practices, such as Maths Mastery? ● If so, how do/have you identified these models or practices as being especially helpful? **Recruitment/CPD for practitioners working with these learners** Do you have any particular recruitment processes in place to hire staff teaching resit subjects? ● If yes, what does this look like? What is the model of professional development that teachers working on

Theme	Questions
	GCSE resits follow? ● How do you understand what skills practitioners need to develop? ● What do you do to support these practitioners to develop their skills/expertise? ● How would you describe the culture of professional development in your organisation? What systems and/or tools do you use to support practitioner development? ● For example, lesson planning frameworks or guidances on best practice - materials and documents that practitioners have access to
What is going well and why (what evidence are they basing it on)	What aspects of the provisions you have in place do you feel are particularly successful? ● What evidence do you have to make you say this? ● What do you think makes this successful/what are the crucial factors in making this work well What aspects of the provisions you have in place do you feel are less successful? ● What evidence do you have to make you say this? ● What do you think makes this unsuccessful? Do you have any publications/materials you can share with us? ● For example, any marketing/written materials
Barriers to success	The success rate for re-sits nationally is generally agreed to be low - what do you think are the main reasons for this? One of the challenges we've identified in our research is the issue of motivating and/or engaging learners and keeping them engaged. What specific challenges in motivating or engaging learners have you encountered as an organisation? ● What have you done to mitigate these challenges? Have you had any challenges around timetabling and resourcing resits? ● What have you done to mitigate these challenges? One common topic of discussion in understanding why some learners struggle with standardised assessments is the role that "cultural capital" plays - for some learners, the way exam questions are posed feels unconnected to their personal experiences. Is this a key issue for your organisation when it comes to supporting learners through resits? ● If so, do you have any particular policies or approaches to helping them overcome these barriers? What are they? Are there any other challenges linked to resits that we haven't addressed?

Theme	Questions
What next for practice	Are there any significant changes you intend on making as an organisation in the upcoming years that will impact any of this? OR The EEF is looking to develop and test interventions as a result of this work in the near future. Are there any particular things you think they should focus on?

Teachers/lecturers

Theme	Questions
Introductions	Check over consent What is your name? What is your role? Can you tell us a bit about your setting? What kind of learners do you work with? Can you tell us a little bit about the learners characteristics that are doing resits?
Approaches to resits	**Understanding where learners are at** What processes are in place to support you in understanding where learners are when they start in addition to existing GCSE data? ● For example, do you have any baseline assessments that you have? ● Do you ask/receive any other information from learners' secondary schools? How do you use this data to inform your teaching practice to support the learners journey? ● Do you have any examples of what this means in practice? Are there any systems in place to incorporate learner feedback into practice? ● If yes, what does this look like? **Assessing learner progress** What formative assessments do you use throughout resit courses/programmes to assess where learners are at? ● For example, quizzes or in class tests ● If yes, how useful do you find collecting this data? How do you use the data you collect to inform practice? **CPD for working with these learners** Are there any systems in place to support you in identifying your CPD needs? ● If yes, do you have any examples? ● Have you done any CPD that relates to supporting re-sit learners?

Theme	Questions
	Does leadership do anything to signal to you that CPD is important and ensure you have access to it?
What is going well and why (what evidence are they basing it on)	What aspects of the provisions you have in place do you feel are particularly successful? ● What evidence do you have to make you say this? ● What do you think makes this successful/what are the crucial factors in making this work well Do you use any particular approaches to teaching for re-sit learners? Can you give examples of promising practices - colleges you believe are especially strong, and/or interventions that are having a real impact?
Barriers to success	*Some of the challenges we've identified in our research is the issue of motivating learners and keeping them engaged.* Have you had any challenges in motivating learners? ● What have you done to mitigate these challenges? Have you had any issues in engaging learners? ● What have you done to mitigate these challenges? Have you experienced any challenges in supporting learners through curriculum expectations (cultural capital) Are there any other challenges linked to resits that we haven't addressed?
What next for practice	What kinds of interventions should EEF invest in to enhance our understanding/ improve the evidence base of how to improve post-16 practice in English and Maths?

Sector leaders

Theme	Questions
Introductions	Check over consent What is your name? What is your role?

Theme	Questions
Recent and current approaches	In 2022, just 15.2% of learners gained a Grade 4 in their Maths GCSE re-sit and 24.1% in English (AoC, 2022). What do you think might be behind this lack of progress? ● Are there any specific pedagogical issues you think contribute to this issue? One of the things emerging from our review of the literature is that there appears to be much more work and thinking going on around supporting Maths GCSE resits than English ones. Does this match with your experience/understanding? Do you have any thoughts about what might be driving this trend? Do you think it accurately reflects the balance of need in the system?
What is going well and why (what evidence are they basing it on)	Can you give examples of promising practices - colleges you believe are especially strong, and/or - interventions that are having a real impact? What do you think might be the key drivers for successful approaches, whether at college level, classroom level, or other interventions? What work are you aware of/have you been involved in to unpack how to do this effectively within and/or across post-16 providers?
What next for practice	What changes do you think are needed that would make the most difference? What barriers are there to making these happen? What kinds of interventions/innovations should EEF invest in to enhance our understanding/ improve the evidence base of how to improve post-16 practice in English and Maths? Do you have any ideas about what is going to be or might be important subtopics to research in the future - where is the sector heading in its practice? How much of what happens in the sector is defined by the current understanding of "what works", and what else is driving sector practice development?

Young people focus group script

Theme	Questions
Your feelings about GCSE resits	● How did you feel about Maths and/or English at secondary school? ● How did you feel about having to resit GCSE maths and/or English when you arrived at college? ○ *Follow-up/clarification questions*

Theme	Questions
	○ Did you know that you would have to resit one or both of those GCSEs before you started? If not, how did you find out, and how did you feel about it? ○ What did your teachers/lecturers say about resits when you started? Did they explain how it was going to work to you clearly, or was it confusing? What (if anything) did they do to make you feel confident about it? ○ Did your teachers/lecturers ask you about your experiences in your GCSEs at all? What did they want to know from/about you?
The teaching you had for resits	● How do you feel about the GCSE teaching you had/are having at college for your resits? ○ *Follow-up/clarification questions* ○ Was/is the teaching you had/are having for resits different from what you had at school? If it was different, how was it different?
Your experiences of resits	● Did you find it easy or hard to study for your resits? What made it easy/difficult? ○ *Follow-up/clarification questions* ○ What could your college and/or college teachers have done which would have made it easier/more comfortable for you to study for your resits? ● Looking back now, has anything changed for you in terms of your feelings about resits? Are you more positive about them now that it's in the past at all? If yes, why is that?
Motivation	● How motivated and engaged do you feel when in your GCSE maths and/or English classes? ○ (If not very motivated) Is there anything your teachers can do to help you feel more motivated and engaged? ● Do you see completing your GCSE in maths and/or English as important generally? ○ Why or why not? ● Do you see completing your GCSE in maths and/or English as important to your career plans?