



Department
for Education

Effective practice in the delivery and teaching of English and Mathematics to 16-18 year olds

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1. Executive summary

The DfE commissioned CFE Research (CFE) in partnership with the University of Nottingham, Birmingham City University and Edge Hill University to undertake research to build a better understanding of, and document, approaches and strategies to effectively plan and deliver post-16 mathematics and English provision, and how best to engage and teach this group of students. This report summarises the findings from this study and offers insight into what constitutes effective delivery and teaching of English and mathematics for students aged 16 to 18 who did not achieve an A*–C pass in GCSE English and/or mathematics at Key Stage 4.

Background to the study

Since August 2014, students aged 16 to 18 who do not hold GCSE Grades A* to C or a suitable equivalent qualification in mathematics and/or in English have been required to study these subjects. In August 2015, a further stipulation meant full time students with a Grade D in English and/or mathematics must be enrolled onto a GCSE rather than an approved stepping stone qualification. The purpose of the policy is to underpin the importance of English and mathematics in helping young people progress in their education and employment. For further education (FE) colleges, the practical outcomes of these changes are a fundamental shift in the volume and importance of English and mathematics GCSEs from qualifications such as Functional Skills.

GCSE and Functional Skill pass rates in 2015/16 for 16–18 year olds taking English and mathematics exams indicate a gap between the performances of institutions, with sixth form colleges on average achieving significantly higher pass rates than FE colleges. Department for Education (DfE) figures provide some important context for this difference. The latest available data shows that providers in the college sector received around five times the number of learners who did not achieve an English or mathematics GCSE A* to C compared to sixth form colleges. Furthermore, half of college entrants achieved an English Grade D compared to seven in ten of those enrolling in a sixth form college. For mathematics, just over a third of mathematics GCSE entrants achieved a Grade D at GCSE compared to over half of those enrolling at a sixth form.

Focus of this report

The purpose of this report is to begin to address the evidence gap that exists on what constitutes the effective delivery and teaching of English and mathematics to those without GCSE A*–C within this wider context.

The objectives set out at the start of this study were:

- Identify factors associated with effective delivery and teaching of English and mathematics to this cohort, particularly in non-selective FE settings

- Understand whether institutions with significantly above average results differ from or take similar approaches to other institutions on the delivery and teaching of English and mathematics
- Understand why there is such significant variation in 16-18 GCSE and Functional Skills pass rates across non-selective institutions
- Identify any effective practices that could be replicated in institutions facing challenges to effectively teach English and mathematics to students yet to achieve GCSE good passes

The report details the findings of this study which are anticipated to assist institutions seeking to improve their teaching and results of English and mathematics GCSE and Functional Skills to 16 to 18 year olds students who have not yet gained at least a Grade C at GCSE or a Grade 4 under the new examination.

Overview of the method

Forty-five FE and sixth form colleges in England participated in the fieldwork on which the findings are based. The key sample characteristics of the providers involved in the study are:

- Large providers, with a high volume of students yet to achieve Level 2 English and mathematics, and a meaningful number of GCSEs and Functional Skills entries at 16-18.
- Typically non-selective FE colleges. Seven sixth form colleges are also included for comparative purposes.
- Providers with a breadth in headline performance based on English and mathematics pass rates, Ofsted grades, and financial status as well as other variables such as local socio-economic circumstances and location.

The sampling for the study was purposive. We provide further information on the profile of the participating providers in Tables 2.2 and 2.3 within the report.

CFE recruited institutions to take part in the study by telephone after an initial invitation email was sent to the agreed sample from DfE. The fieldwork with the 45 institutions participating in this study included:

- telephone depth-interviews with a senior leader to understand the colleges' strategic approach to delivering English and mathematics;
- a short pro-forma completed by senior leaders and/or subject heads to collate consistent data of key factors in the delivery of English and mathematics;
- on-site interviews with English and/or mathematics teaching staff, subject heads, and learners; and

- ethnographic work to observe lessons and gain deeper insight into the factors contributing to effective practice.

It is important that we highlight the potential limitations of the findings, given the methods that were adopted. Our sampling strategy was designed to compare institutions so we could identify reasons why some providers achieve significantly above average results in 16–18 GCSE and Functional Skills pass rates. However, a number of factors limit the feasibility of identifying clearly-differing practices that impact performance across the institutions in our sample. Firstly, providers are, in the main, implementing similar teaching and learning practices. There are also factors outside the control of individual institutions e.g. local economic markets, varying incidences of students with additional needs that impact the effectiveness of the practices being delivered. Finally, certain practices are interlinked with leadership and management, making it difficult to isolate their effectiveness.

Key findings

We summarise the key findings of the study here in relation to the three themes that emerged during our analysis.

Contextual factors that influence teaching and learning

Providers face a number of challenges as a consequence of the characteristics of the student cohorts that affect how they approach teaching and learning for target students.¹ There are also organisational issues associated with dealing with large volumes of students over multiple sites in largely vocationally-orientated learning environments.

Our key findings with regard to contextual factors that influence teaching and learning include:

- The variety in students' backgrounds, prior qualifications and actual attainment presents challenges to providers, particularly in view of the large numbers of students concerned.
- For those who did not achieve the accepted standard of a GCSE Grade C previously then this apparent 'failure' can lead to contrasting attitudes and different levels of motivation to re-engage with learning the subjects.
- Cultivating more positive student attitudes in order to improve students' motivation and attendance is key and teachers develop a range of strategies to overcome this (such as dialogic approaches) with varied effectiveness.

¹ Target students are those who have not yet gained GCSE grade C in English and mathematics.

- Motivation is low for many students, although there are some who do see this as an opportunity to improve their attainment level and therefore engage more readily with the lessons. Mathematics generally evokes a stronger reaction.
- Providers often need to cultivate a positive mental attitude amongst students to increase motivation and confidence to retake their English and mathematics qualifications.
- Resitting examinations in the formal setting required is a stressful and emotional experience for some students. Consequently such students can exhibit avoidance behaviours, such as infrequent attendance, passive non-engagement with learning activities or in-class disruption.
- Providers with large numbers of ESOL students can struggle to provide the additional support that they require.
- Providers report a large number of students with additional support needs, including learning difficulties such as dyslexia or autism and or mental health issues. Consequently, additional resources and support are required. There is a perceived degree of under-reporting of these issues by schools.
- Colleges located in coastal and rural settings presented travel challenges for students. The lack of frequent, regular and direct public transport links to colleges were sometimes a challenge.
- The local socio-economic conditions can affect both providers ability to recruit specialist teachers and managers and can influence students' attendance.

Teaching practices that influence learning

Our key findings with regard to the role of teaching practices and their influence on learning include:

- Diagnostic assessments of students are often carried out by providers during the enrolment and induction period, however, there is significant variation in the type of diagnostic test and in how the results are used.
- Providers tend to use a diagnostic assessment of their own to determine a student's current level of knowledge, as timely and detailed information on students' prior actual marks (as opposed to overall grades) is not available to them.
- Teachers use various classroom-based activities to diagnose students' strengths and weaknesses.

- Most providers aim for levelled rather than mixed ability classes for English and Mathematics where possible, to allow for a more targeted approach to addressing individual difficulties but still requires some differentiation. Peer-led learning approaches are also believed to be more effective in mixed-ability groups.
- Group profiles are used by teacher to identify topics and concepts that need to be prioritised for the whole class and adjustments are made to schemes of work accordingly. Individual needs that become apparent from diagnostic assessment are addressed through the adoption of differentiated approaches.
- Diagnostics also identify the additional support needed by students with specific learning difficulties. It also acknowledges that individual students may require some short-term or continuing support with English and mathematics in addition to their normal timetabled sessions.
- Motivating students in English and mathematics lessons is a central feature of further education teaching. Colleges make a point of changing the style of relationship between the teacher and student compared to that used in schools. Colleges adopt an adult-to-adult relationship that is based on understanding the students' concerns, encouraging them to think differently about the subjects and themselves, and increasing confidence. Colleges use the different environment compared to schools in an attempt to change sometimes deep-rooted attitudes².
- Personal goals and targets are also used to motivate students, especially those who aspire towards higher education for which minimum qualification levels of English and mathematics are necessary.
- The primary goal of the policy is for students to achieve a minimum examination pass grade. Teachers therefore need to have specific, detailed knowledge of the gaps in an individual's knowledge and embed elements of the examination progress and curricula into lessons. Teachers explain how examinations are marked and where the most marks can be extracted from papers or individual questions.
- Contextualising learning is also important. Some colleges developed English and mathematics lessons that are relevant to elective courses ('mathematics for plumbers', for example). There remains a body of opinion that the Functional Skills qualification is a better qualification for contextualised learning than the GCSE as Functional Skills has applied rather than theoretical content.

² The Education training Foundation runs specific courses that focus on the need to teach GCSE differently in college. More detail is provided at <http://www.et-foundation.co.uk/supporting/support-practitioners/maths-and-english-pipeline/>

- Low motivation results in a series of negative behaviours including poor attendance to lessons. Teachers address this through several means such as making lessons as engaging as possible and breaking lessons into smaller chunks of different activities to maintain interest.
- Teachers also recognise that some students do not wish to admit they do not understand specific concepts in front of their peers. Teachers therefore adopt a range of classroom strategies whereby students get support through mechanisms such as classroom assistants, peer-learning and self-rating systems.
- Personalisation and differentiation within the classroom is central to the further education approach to teaching. In the main, classes within further education are smaller than those in schools, which is necessary in order to provide the targeted support necessary to address gaps in knowledge amongst students. This inevitably results in classes with mixed abilities for which some students require stretching for certain topics. Lesson plans are designed with different abilities in mind to ensure all students are engaged and progressing.
- Another thread running through much teaching and delivery is recognising students spent many years at school without achieving the set grade during their GCSEs. For most further education teachers, trying different methods is important in order to develop subject understanding. This can encompass different pathways to reach the same goal, structuring lessons differently to maintain engagement and embracing a different learning culture.

Leadership and management practices that influence teaching and learning

Our key findings with regard to leadership and management practices that influence teaching and learning include:

- Strategic planning and preparation are important to ensure colleges are geared up to respond to policy changes. A rule of thumb is that the longer colleges have had strategic plans in place to manage changes resulting from the D Grade policy, the better their response to managing change resulting from the policy. Such providers tend to have more stable staffing structures in place, including senior management teams. They also tend to have clearer organisational policies, goals governing how the policy will be delivered and monitoring mechanisms to assess the impact of changes they make in delivery.
- Colleges also appear to operate more effectively when curriculum managers and teachers in other subjects value English and mathematics teaching. In instances where curriculum leaders advocate the college English and mathematics policy, pass rates tend to be higher. Similarly, if staff in other curriculum areas are reticent to promote the relevance and importance of English and mathematics, barriers exist that can hinder effective teaching and delivery.

- The English and mathematics staffing structure plays an important role in effective teaching a delivery. Senior college managers value teachers with experience in further education who understand the different mindset required compared to school. In many cases, colleges have encouraged existing staff with existing minimum qualifications levels (typically an A level in the relevant subject) to retrain as English or mathematics teachers.
- Other colleges expressed a strong preference for some sort of teaching qualification amongst English and mathematics GCSE teaching staff. However, the local economic realities faced by colleges means qualified staff can be hard to recruit. A range of methods are used to fill vacancies including some substantial 'golden hello's, recruitment from schools (including primary schools) and offers to those with the right skills / qualifications who are willing to retrain as a teacher.
- There are two main English / mathematics departmental structures present in further education colleges:
 - A centralised department where students from different curriculum areas come from elsewhere in the college to receive English and mathematics teaching; and
 - A dispersed system whereby specialist English and mathematics teachers are based in curriculum areas.
- Both have benefits and drawbacks. Centralised departments offer a physical home for the subjects within the college, can pool resources and the structure facilitates interaction and learning between teachers. Dispersed departments can more readily contextualise English and mathematics within lessons and facilitate embedded learning into the elective curriculum. Teachers are also often able to use terminology familiar to students of elective subjects.
- Approaches to timetabling also differ between providers, ranging from GCSE lessons from three hours per session once per week to sessions of 50 minutes four times per week. Providers that timetabled English and mathematics lessons before elective subjects tended to find the process less challenging. In such cases, lessons are often in the middle of the day to encourage attendance.

Summary of listed actions and outcomes taken by providers

Introduction

The full report provides a number of examples of the actions providers take to deliver GCSE and Functional Skills English and mathematics. This section summarises the actions listed in this report alongside the outcomes and impacts reported by research participants.

Provider context and environment

Leveraging the benefits of the further education learning environment

The emphasis of further education teaching is identifying and addressing students' gaps in knowledge rather than the school approach to aim for complete 'coverage'.

The FE college culture is widely reported to provide a mature and more accessible classroom environment compared to school. The culture is based on the positive relationships fostered between teachers and students that are seen as an essential element of an effective classroom. This environment encourages students to take ownership of their learning and question and discuss their subjects with their teachers.

A whole college approach³ to English and mathematics encourages staff and students to take a positive approach towards the subjects. Providers sometimes deliver professional development sessions for vocational teachers so that they can promote English and mathematics in their own lessons, thereby reinforcing the relevance of the subjects to the student and actively encouraging them to attend class. The whole college approach is more successful when monitored and led by an enthusiastic senior leadership team.

Smaller class sizes in FE colleges allow more individual attention for students and allows teachers to use tailored approaches to understand concepts or processes. Students believe this improves their confidence and allows them to make better subject progress.

Some teachers view the development of positive relationships with their students as an essential element of an effective classroom and prioritise this at the beginning of the year.

³ In which responsibility for English and mathematics is the responsibility of all staff and departments.

Actions pertaining to geography / location

Liaising with senior staff at feeder schools provides early access to marks data and allows classes to be tailored accordingly.

Overcoming transport issues can occur by scheduling English and mathematics lessons in the middle of the same day when elective subjects are taught.

Recognising and managing differences in students' abilities

External diagnostics

Diagnostic testing as a barometer to determine the existing knowledge levels of a student on the subject content, their proficiency in routine tasks and the gaps in their knowledge. Diagnostics are a central part of curriculum and individual student planning in all providers.

Students' abilities in English and mathematics are sometimes determined by obtaining their prior results direct from schools. This allows providers to decide whether they should be enrolled on a GCSE re-take or Functional Skills qualification. However, at the time of writing, such data could not be provided centrally by the Department for Education instead requiring direct communication between the provider and the student's former school. This leads to differences in the speed and quality of data for students depending on the ability and/or desire of their former school to provide information to the provider.

Identifying existing knowledge

Whole class profiles can prioritise topics and concepts for the group. Creating mixed tasks within a set concept provides the opportunity to specifically target individual student weaknesses within the class.

Peer-to-peer activities allow students with deficit in a given concept to learn from another student, and allows the more advanced student to embed their own knowledge. Peer learning offers stronger students the opportunity to self-assess their own understanding, refine ideas and build confidence. It offers less able students the opportunity to address weakness.

In-lesson observation and practice

Using multiple diagnostic assessments helps tailor lessons to address weaknesses in student knowledge. Applied methods include:

- Whole class discussions to ascertain current knowledge level, draw out understanding and address misconceptions – this method is typically applied on a completed or attempted task
- Using quizzes, sometimes with online software
- Providing opportunities for students to rate their own understanding of a subject – for example, using ‘traffic light cards’ or personal whiteboards

A targeted approach to addressing individual difficulties in understanding within-subject topics is simpler in similar ability classes because it is easier to compare levels between students.

Diagnostic assessments can be used to inform pedagogy. Formative assessment within lessons can be delivered through class discussion, collaborative work with peers, peer assessment, self-assessment and periodic testing. Maintaining records of performance can inform future teaching practice and methods for the class in question and for wider delivery.

Early entry into examination / intensive study periods

Where early diagnosis of GCSE level is viable, students more likely to pass an early resit can be identified. This reduces overall class sizes for the remainder of the year and provides teachers with the time to concentrate on those who have more significant improvement needs.

Offering the opportunity to resit examinations early can be a key motivator in getting students motivated and focused on success.

Supporting and motivating students and their learning

Delivering classroom support

Many providers identify the need for students to access extra support with English and mathematics, both in and outside their normal classroom. Providers offer extra support in the format of workshops (outside of class), virtual learning environments (or other computer-based self-study materials) and opportunities to ask questions after-class provides students with additional opportunities to increase their understanding of topics they may be struggling with.

Providers offer additional classroom support for students with eligible (i.e. funded) learning needs. This funding is often pooled in order to deliver a more efficient cross-provider support service team. The composition of such teams varies by provider. Most offer specialised support for students with learning difficulties or special educational needs.

All providers operate within very tight budget constraints. As a result, staff members can fulfil several different roles as part of their position.

Supporting special educational needs (SEN) and ESOL students

Support staff develop strong, positive relationships with students in classes and are aware of those who need additional help. They also liaise directly with teachers and can provide personal support such as timetabled workshop. This level of support is highly valued by students and, in many cases, students report a higher level of support at the provider compared to school.

In some cases, teachers were trained in dyslexia support techniques for them to share techniques with other staff. This helped teachers recognise signs of dyslexia as well as improving in class management and differential teaching for affected students.

Several providers held mock exams and provided related pastoral care to help prepare students for exams and improve their confidence. Additional support (for example, scribes) was also provided to help SEN students with exams. Anecdotal testimony suggests such support requirements were not always identified by schools.

ESOL students taught in the same class as other students by an ESOL qualified teacher. This helps the teacher adapt lessons to their needs.

Support to addressing poor attendance

Keeping up-to-date records of students' extenuating circumstances that might impact their ability to attend a class. Such records help understand reasons for non-attendance and help develop mitigation strategies.

Providing alternative classes or workshops in English and mathematics to enable students to catch up on lessons they may have missed.

Communicating directly with parents and employers

Inviting parents to one-to-one meetings / other direct communication helps explain the value of English and mathematics to them. Parents can be influential in improving the motivation of some students.

Inviting employers to present to students how and why English and mathematics are important skills for employment. This shows students the value of English and mathematics in the workplace and illustrates real-life applications of each subject.

Addressing behaviour related to motivation

Providers operate reward systems to encourage attendance in English and mathematics classes. Good attendance can lead to recognition rewards such as certificates and

financial incentives, such as vouchers. Poor attendance is typically addressed through support and intervention before any sort of disciplinary procedures are considered.

Exam anxiety

Anxiety can lead students to missing exams. Providers offer a number of tactics in response such as providing pre-exam refreshments to help students relax and having staff present on the day to support students or, in some instances, offering revision mornings are run to alleviate fears about specific topics in afternoon examinations.

Lesson management and planning

Lesson planning and structure

Common schemes of work are useful for resource planning. They can provide a level of efficiency within the time constraints of improving GCSE marks.

Lack of understanding for fundamental concepts or skills are often identified as the areas constraining a student's progress. To address this issue teachers often use collaborative and interactive tasks to engage students and improve their understanding.

Lesson observations suggest that it is fairly common practice for teachers to offer alternative methods to teach a concept, rather than offering a single method to the whole class, and to persist until students do understand. This pedagogical approach and level of support from teachers is clearly an approach that brings success with student learning but places demands on teachers to be resourceful, patient and knowledgeable about alternative methods.

Engaging students

Some providers successfully engage students when using a mixture of lesson activities structured around a coherent theme. Activities include switching between group and individual work or paper and computer based tasks.

Aligning subjects with areas of interest such as a student's elective subject or contemporary topics can also encourage engagement, as can the use of active learning approaches.

Some providers value teachers who can use imaginative and innovative techniques which will retain a student's focus in a further education environment.

Highlighting a student's success helps improve their motivation. Reducing difficult and longer tasks into smaller, manageable components helps students learn elements of a topic they previously felt beyond them.

Personalisation and differentiation

Most teachers rely on differentiation within the classroom to ensure that individual learning needs are met. In practice, differentiation can be challenging and approaches vary; some providers use a common scheme of work with some flexibility so that teachers can spend more time on topics, depending on the needs of their groups and individuals. Another approach is to use software and online resources to generate individual targets and work materials for each student.

Timetabling Functional Skills lessons

Most providers timetable Functional Skills so that a single class spans two levels of ability at most. This maximises opportunities for peer learning as there is not too big a gap between abilities. However this is not always viable if student numbers for functional skills are low.

Use of homework

Homework can be provided either on a provider's own online platform or via web-based open access materials or through commercial packages of self-study materials. Online methods help track progress and often provide tests and diagnostics as a part of the application.

Examination techniques

Students' reading ability can affect comprehension of 'wordy' mathematics questions. Teachers break down such problems to aid student cognition. One provider introduced a reading scheme to help students process such questions. This can be particularly helpful for ESOL students with good mathematics abilities with a poorer grasp of English.

In order to help students prepare for exams providers teach them what approaches to use that will attract marks so that they can maximise their chances of success. One example in mathematics is emphasising the importance of showing how the student arrives at a solution. In addition, some providers timetable additional revision sessions to teach students how to revise and techniques for success.

Leadership and strategic management

Staffing

All staff are made aware of the importance of English and mathematics regardless of their subject specialism.

Providers realise the importance of having a full complement of English and mathematics teachers and managers. Many offer financial incentives to recruit and retain staff by offering golden hellos and competitive salary packages and progression routes.

Some providers help embed GCSE English and mathematics within other subject curricula by upskilling Functional Skills teachers or reskilling teachers of other related subjects to be English or mathematics teachers. Such teachers are often better placed to make connections between English and mathematics and a student's elective subject(s).

Reskilling existing teachers has a number of benefits as these teachers are a known quantity, have existing FE sector teaching and relationship management skills, and in the case of FE colleges, are often experienced in motivating students. Such staff also know the teaching and learning culture of the provider. In terms of reskilling, ETF's (Education Training Foundation) English and mathematics teaching enhancement programmes are viewed positively by many.

Recruiting primary school teachers in some colleges helped to address the gaps in knowledge around the fundamentals of English and mathematics.

Training teaching assistants in English and mathematics benefits classes with the provision of subject-specific support whilst freeing up the teacher to focus on delivering the lesson in the most engaging way possible.

Teaching qualifications provide the pedagogical underpinning that aligns with subject knowledge but colleges have found the ability to apply technical teaching skills in an FE environment is the most desirable attribute.

Embedding English and mathematics in other curricula

Other methods are employed to embed English and mathematics:

- devolving responsibility for identifying and marking elements of numeracy and literacy in their students' work to teachers of all subjects
- CPD days are offered to promote ways to teach English and mathematics within lessons
- online numeracy and literacy activities and support materials are created which staff can access and integrate into classes

English and mathematics targets are sometime used in all staff performance management and targets. Senior leaders say the impacts are that staff communicate the importance of English and mathematics to students consistently in lessons, and that the quality of the teaching for all staff improves.

Timetabling

Lesson scheduling was least challenging for providers who prioritised English and mathematics before elective subjects; class frequency, length, size and composition of students were easier to account for.

English and mathematics classes are most commonly comprised of students from between one and three elective subject areas. Where more than one subject area is included, providers typically aim to group students studying similar subject areas. This is because lessons can be better tailored to the interests of students – which is key to successful engagement and reported improvements in performance.

In addition, limiting the number of students from different elective classes means that students are surrounded by friends and peers that encourages confidence according to many providers.

Lesson duration

There are two different approaches taken to class length amongst providers. The reported benefits of shorter lessons spread throughout the week are better concentration and the opportunity to build on knowledge as the week progresses.

Longer lessons afford more time to go into depth on a topic but the time between lessons can mean students forget the content more easily; students' concentration levels can also drop towards the end of the class. Non-attendance is also an issue and is potentially more damaging with longer classes.

Authors and acknowledgements

The lead authors for the study are John Higton and Rachael Archer of CFE Research, and Dr Diane Dalby of the University of Nottingham. Contributions and comments were made by members of the CFE team and other research partners. Contributing CFE Research team members were Dr Guy Birkin, Sarah Robinson and Alex Stutz. Alongside their fieldwork activity, comments and suggestions were also received from Dr Vicky Duckworth (Edge Hill University) and Dr Rob Smith (Birmingham City University).

Guidance, comment and direction was provided by a number of staff from the Department for Education over the lifetime of the study and we thank them for work they have provided. This includes members of the steering group including Eleanor Stringer (Education Endowment Foundation), Helen Pettifor (The Education and Training Foundation), Catherine Sezen (Association of Colleges), Frances Moody (East Berkshire College), Rosie Sharp (Highbury College) and Lindsey Johnson (West Suffolk College).

Most importantly, our partnership would also like to thank all the staff and students from the further education providers who agreed to spend a significant amount of time organising visits to their premises on our behalf and taking part in fieldwork. The warmth accorded to our researchers was greatly appreciated.

2. Introduction

Background of the study

Since August 2014, students aged 16 to 18 who do not hold GCSE Grades A* to C or a suitable equivalent qualification in mathematics and/or in English have been required to study these subjects. In August 2015, a further stipulation meant full time students with a Grade D in English and/or mathematics must be enrolled onto a GCSE rather than an approved stepping stone qualification.⁴ The purpose of the policy is to underpin the importance of English and mathematics in helping young people progress in their education and employment. For further education (FE) colleges, the practical outcomes of these changes are a fundamental shift in the volume and importance of English and mathematics GCSEs from qualifications such as Functional Skills.

GCSE and Functional Skill pass rates in 2015/16 for 16–18 year olds taking English and mathematics exams indicate gaps between the performances of institutions, with sixth form colleges on average achieving significantly higher pass rates than FE colleges. Department for Education (DfE) figures do provide some important context for this difference (Table 2:1 overleaf). The latest available data shows that providers in the college sector received around five times the number of learners who did not achieve an English or mathematics GCSE A* to C compared to sixth form colleges. Furthermore, half of college entrants achieved an English Grade D compared to seven in ten of those enrolling in a sixth form college. For mathematics, just over a third of mathematics GCSE entrants achieved a Grade D at GCSE compared to over half of those enrolling at a sixth form.

The purpose of this report is to begin to address an evidence gap exists on what constitutes the effective delivery and teaching of English and mathematics to those without GCSE A*–C within this wider context.

The DfE commissioned CFE Research (CFE) in partnership with the University of Nottingham, Birmingham City University and Edge Hill University to build a better understanding of, and document, approaches and strategies to effectively plan and deliver post-16 mathematics and English provision, and identify how best to engage and teach this group of students.

⁴ See Department for Education (2016) *Guidance: 16 to 19 funding: mathematics and English condition of funding*. <https://www.gov.uk/guidance/16-to-19-funding-mathematics-and-english-condition-of-funding#grade-d-requirement-to-the-condition-of-funding>

Type of provider	Number of providers (n)	English				Mathematics			
		KS4 GCSE results 2012/13			Entrants passing with Grades A*-C in GCSE 2014/15 (%)	KS4 GCSE results 2012/13			Entrants passing with Grades A*-C in GCSE 2014/15 (%)
		Average: did not achieve A*- C (n)	Average: Grade D (n)	Proportion with Grade D (%)		Average: did not achieve A*- C (n)	Average : Grade D (n)	Proportion with Grade D (%)	
College	234	466	239	51.2%	10.2%	422	146	34.5%	5.3%
School	2,373	13	10	77.5%	35.0%	12	7	56.5%	16.1%
Sixth Form	113	97	68	69.9%	48.8%	81	43	52.8%	33.4%
Total	2,720	55	38	69.1%	32.8%	52	25	47.6%	15.7%

Table 2:1: Comparative prior attainment and GCSE English / mathematics pass rates of learners by provider type

This report details the findings of this study which are anticipated to assist institutions seeking to improve their teaching and results of English and mathematics GCSE and Functional Skills to 16 to 18 year olds students who have not yet gained at least a Grade C at GCSE.

Aims and objectives

This study aims to provide insight and understanding of what constitutes effective delivery and teaching of English and mathematics for students aged 16 to 18 who did not achieve an A*– C pass in GCSE English and/or mathematics at Key Stage 4.

The objectives set out at the start of this study were to:

- Identify factors associated with effective delivery and teaching of English and mathematics to this cohort, particularly in non-selective FE settings;
- Understand whether institutions with significantly above average results differ from or take similar approaches to other institutions on the delivery and teaching of English and mathematics;
- Understand why there is such significant variation in 16-18 GCSE and Functional Skills pass rates across non-selective institutions; and
- Identify any effective practices that could be replicated in institutions facing challenges to effectively teach English and mathematics to students yet to achieve GCSE good passes.

Outline of the method

The methodology for this study was designed in close partnership with DfE. Forty-five FE and sixth form colleges in England participated in the fieldwork on which the findings are based. The key sample characteristics of the providers involved in the study are:

- They teach large numbers of students yet to achieve Level 2 English and mathematics, with a meaningful number of GCSEs and Functional Skills entries at 16–18.
- The majority of the providers were non-selective FE colleges. Seven sixth form colleges also included for comparative purposes.
- They include providers with a breadth in headline performance based on English and mathematics pass rates, Ofsted grades, and financial status as well as other variables such as local socio-economic circumstances and geographic location.

The sampling for the study is purposive which means we sought enough field visits to cover potential eventualities and contexts as well as try to identify reasons why some providers achieve significantly above average results in 16–18 GCSE and Functional Skills pass rates, rather than seeking representation.

CFE recruited institutions to take part in the study by telephone after an initial invitation email was sent to the agreed sample from DfE. The fieldwork with the 45 institutions participating in this study included:

- Telephone interviews lasting approximately 60 minutes with a senior leader to understand the college's strategic approach to delivering English and mathematics to this cohort;
- The completion of a short pro forma by senior leaders and/or subject heads to collate consistent and comparable data of key factors in the delivery of English and mathematics e.g. numbers enrolled on GCSE or Functional Skills; average size of classes; number and length of English and mathematics sessions per week; and rates of attendance;
- On-site interviews with English and/or mathematics teaching staff, subject heads, and learners, either in small groups, pairs or individually, to explore in detail the specific activities, practices and delivery arrangements, and any impacts of these highlighted through the in-depth telephone interviews with senior leaders; and
- Ethnographic work to observe lessons and gain deeper insight into the factors contributing to effective practice.

Profile of participating providers

Table 2:2 and Table 2:3 illustrate the key characteristics of the colleges that participated in the study. Through our purposive approach our sample of participating colleges comprises:

- Seven sixth form colleges provide a comparison to the 38 FE colleges which were the primary focus of the study.
- There is a geographic spread of colleges from across England.
- All but one of the colleges are located in urban areas which is aligned to the ratio of only 8 of 236 institutions in the sample classed as rural.
- A relatively equal split in terms of the number of the best (21) and less well (15) performing colleges in terms of pass rates in 2015/16 for GCSE English and mathematics.
- A fair range of colleges in terms of their financial performance.
- A variety of institutions regarding the socio-economic background of their learners.

Location	Type of college		Total
	General FE	Sixth Form	
London	7	1	8
South East	8	0	8
North West	5	2	7
South West	5	0	5
East Midlands	3	1	4
East of England	4	0	4
West Midlands	3	1	4
Yorkshire and Humberside	2	2	4
North East	1	0	1
Total	38	7	45

Table 2:2: Regional profile of participating institutions

Sampling criteria		Type of college		Total
		General FE	Sixth Form	
GCSE pass rate 2015/16 ⁵	<i>Top quartile for both English and mathematics, or top quartile in one and top half in the other</i>	16	5	21
	<i>Top quartile English, bottom half mathematics</i>	3	1	4
	<i>Top quartile mathematics, bottom half English</i>	4	0	4
	<i>Bottom quartile in English and mathematics, or bottom quartile in one, bottom half in the other</i>	15	0	15
	<i>Only do mathematics, top quartile</i>	0	1	1
Financial standing 2013/14	<i>Outstanding</i>	14	0	14
	<i>Good</i>	10	0	10
	<i>Satisfactory</i>	13	0	13
	<i>Inadequate</i>	1	0	1
	<i>Unknown</i>	0	7	7
Average indices of multiple deprivation score of learners 2013/14	<i>Low (0-8,999)</i>	10	3	13
	<i>Medium (9,000-17,999)</i>	19	0	19
	<i>High (18,000-26,999)</i>	9	0	9
	<i>Unknown</i>	0	4	4
Total		38	7	45

Table 2:3: Performance of participating institutions

⁵ Unpublished data supplied by DfE for the purpose of sampling

Report structure

The findings of this study consider the key influences on effective teaching and learning practice of English and mathematics to 16–18 year olds. We have ordered our findings in the following three sections:

- First, we consider the broader learner issues which govern the delivery of teaching and learning;
- Then, we explore teaching practices which influence learning; and
- Following this, we examine leadership and management practices that influence teaching and learning.

The report concludes by summarising the key findings in relation to the objectives for the study.

Limitations for the findings

Our sampling approach aimed to compare institutions so we could identify reasons why some providers achieve significantly above average results in 16-18 GCSE and Functional Skills pass rates. However, due to the following factors it has not been possible to identify clearly differentiating practices that impact performance across the institutions in our sample:

- Providers are in the main implementing similar teaching and learning practices;
- Factors outside the control of individual institutions e.g. local economic markets, varying incidences of students with additional needs (whether learning, behavioural or language related) etc., impact the effectiveness of the practices being delivered; and
- Practices are interlinked with leadership and management decisions making it difficult to isolate their effectiveness.

Illustrating the findings

Throughout this report we include examples of approaches and practices we have identified and observed in the course of the fieldwork. We do this in two ways:

- Vignettes which are short examples in boxes to illustrate effective practice, be that pedagogical or structural; and
- Annex 1 which summarises all provider actions and practices listed in the report and their desired impacts.

The effective and differential practice we have included in this report was found in providers that have good pass rates in one or both of English and mathematics GCSE examinations and those with lower GCSE pass rates. Importantly, teaching practice and

college management is one of many factors that influence pass rates; Section 3 describes the large variety of contexts in which providers operate that are influential. Practices are selected where findings suggest positive, value-added impact on students, whether in relation to their academic achievement directly or by supporting behavioural change which might have a subsequent, indirect, positive influence on GCSE pass rates.

3. Contextual factors that influence teaching and learning

Providers in post-16 education face a number of challenges that affect how they approach teaching and learning for target students.⁶ Some of these arise from the nature of the student cohort and others from organisational issues when dealing with large numbers of students across multiple departments and sites in learning environments that are largely vocationally-orientated.

In this section the main characteristics of the student cohort are described before examining some of the teaching and learning approaches that providers are using and the environmental context in which the provider operates. Reference is made to some of the organisational factors that affect classroom practice but these are explored in detail in Section 5.

Students' prior achievement

Most of the target students are those who did not achieve a Grade C or above at GCSE in English or Maths. In addition there are a small number of students who took a Functional Skills qualification in school and some who have not taken the GCSE examination for different reasons (e.g. recent refugee arrivals). The Education and Training Foundation⁷ estimates that three quarters of pupils who do not achieve a GCSE Grade C in English or mathematics by the end of Year 11 move to FE colleges.

The policy identifies those achieving a Grade D as the target GCSE cohort, but:

- Within-grade variation can be large (low D to high D).
- Some providers choose to widen this out to include those with an E as GCSE entrants rather than entering them first onto Functional Skills.
- The three-month gap between GCSE exam and starting at College can lower performance level at the time of enrolment.
- Some students have not yet had the opportunity to take the GCSE examination.

The variety in students' backgrounds, prior qualifications and actual attainment presents challenges to providers, particularly in view of the large numbers of students concerned. In addition to the diagnostic processes that providers use to make decisions (See Section 4), providers feel they need to take into account the background characteristics of the student cohort if learning is to be successful.

⁶ Target students are those who have not yet gained GCSE grade C in English and mathematics.

⁷ The Education and Training Foundation (2014) *Effective Practices in Post-16 Vocational Maths*

Students' motivation and provider decision-making

The attitudes and motivations of students to study English and mathematics in post-16 education are strongly affected by prior learning experiences (including how they were taught), examination outcomes and future aspirations. For those who have not achieved the accepted standard of a GCSE Grade C then this apparent 'failure' can lead to contrasting attitudes and different levels of motivation to re-engage with learning the subjects. Some students are disappointed by their GCSE grade but are still motivated to try and improve. More often, students lack motivation to study these subjects further and their attitudes reflect expectations of continuing failure driven by their own self-esteem and/or how their abilities have been labelled by others.

They've often come to us saying, 'I'm rubbish at maths,' or, 'I'm rubbish at English,' so it's turning that around. A lot of them vote with their feet. They don't attend.

General FEC, urban, fewer than 1,000 GCSE students
Teacher

One of the main challenges for providers is to cultivate more positive student attitudes in order to improve their motivation and attendance but there are also other characteristics of this student cohort that affect the teaching and learning of English and mathematics. Teachers develop a range of strategies, inside and outside the classroom, to overcome these but contextual factors also influence their effectiveness. Further details of how providers tackle these challenges (such as through 'dialogic' approaches⁸) are reported in Section 4 but the main common characteristics of the student cohort are as below.

A large proportion of target learners are demotivated

Providers almost invariably state that motivating students to learn English and mathematics is a major challenge. As one teacher explains, "They're not coming with a pre-set predisposition to enjoy Mathematics and English." Motivation is low for many of these students, although there are some who do see this as an opportunity to improve their attainment level and therefore engage more readily with the lessons. These are more often the students who are aiming to progress to Higher Education courses for which GCSE English and mathematics are entry requirements or Apprenticeships where employers may require them; some are convinced that achieving a better qualification in mathematics and English is something that will be useful generally for them in the future.

Now for those who are very settled about what they want to do in their lives, or their next step, if you want to go to university for example, they know they've got to get

⁸ 'Dialogic': Pertaining to lessons run as an ongoing dialogue between the teacher and students, and between students, rather than solely a teacher presenting a topic.

a C in English and maths. They tend to be highly motivated. If they want to get into plumbing, they know they need maths, you know? So the motivation is linked to their aspiration.

General FEC, urban, fewer than 1,000 GCSE
Senior leader

However, most students demonstrate a lack of motivation to study English and mathematics, with mathematics generally evoking the stronger reaction. There are multiple reasons why students lack motivation and some of these are explained further below, although it should be noted that student demotivation is often due to a combination of these factors rather than attributable to a single reason.

I hate maths personally so I was dreading it. I don't hate it as much in college but probably that's because we do less maths, just one session a week.

General FEC, semi-urban, fewer than 1,000 GCSE
Mathematics learner

Encouraging a positive mental attitude to increase students' motivation and confidence to retake their English and mathematics qualifications

General FEC, semi-urban, fewer than 1,000 GCSE students

The staff at the college are aware that many students on enrolment believe they are incapable of passing their English and/or mathematics exams and are often demotivated when they realise they have to continue studying them as part of their study programmes. Teachers and managers at the college have therefore introduced and communicate the mantra of 'not yet' which means 'you haven't got your GCSE Grade C yet, but you will get it eventually'. Teachers and managers reported that communicating the 'not yet' mantra to students having to re-sit their English and mathematics exams has helped overcome the sense of failure that many students feel when they realise they need to continue studying the subjects and has encouraged a more positive attitude to their learning.

Students are resistant to repeating GCSE English and mathematics

Students who have already 'failed' the GCSE examination after studying the subject for five years in secondary education are often reluctant to re-engage with the same subject content and resit the same examination. Repetition of a curriculum associated with negative learning experiences in the past reinforces expectations of continuing failure. Providers have serious concerns about the impact on students of continuing failure as re-enacted experience of disappointment and failure reinforces negative emotions about the

subject, undermines any self-confidence gained in lessons and adds to existing expectations of continuing failure.

English and/or mathematics are seen by these students as difficult subjects and they lack the confidence in the classroom to engage with the tasks, ask questions or participate in group discussions that would help them learn, often because questioning behaviours were discouraged at school. There is evidence from providers that resitting the examinations in the formal setting required is a stressful and emotional experience for some students. A consequence is for students to exhibit avoidance behaviours such as infrequent attendance, passive non-engagement with learning activities or in-class disruption. How this addressed is covered in Section 4.

There is widespread opinion amongst teachers that GCSE is not the most suitable qualification for many of target students and a more appropriate qualification would be one that focuses on the application of mathematics or the use of English to improve factors such as employability and occupational proficiency. Students often have to be reminded, persuaded and supported to ensure they actually attend and attempt formal examinations.

For example, the inclusion in GCSE English of 19th century texts presents additional challenges for students who are unfamiliar with the historical culture of England. A simple phrase such as ‘coach and horses’ or the concept of a 19th century boarding school take time to explain to students with little understanding of England in the 19th century and in a very short resit course teachers question whether this is best use of time.

Similarly, students learning GCSE mathematics fail to see the usefulness of certain topics such as trigonometry and geometry. Understanding the future value of the subject material is a strong motivational factor and students often find it hard to engage with topics that they view as irrelevant to their lives or aspirations.

I can see that you need maths when working, in every job, but people should think about what maths is learned in college. Some of it will never be used in life. It would be better and I would like it more if it was the maths that is useful my own vocational subject. The reason to be in college is to learn vocational skills not maths.

General FEC, semi-urban, fewer than 1,000 GCSE
Mathematics learner

Many teachers also believe that formal examinations are not the most appropriate means of assessment for some of these students and suggest that less-formal forms of continuing assessment, in familiar surroundings, allow students better opportunities to demonstrate their knowledge and skills.

Students with English as an additional language (EAL)

Some providers have student cohorts with large proportions of second, or even third, language speakers and many of these students are taking English or mathematics

qualifications since their language skills are still insecure. Some of these students might have been born in the UK but speak a different language at home and with their friends, whilst others have arrived in the country in their early teens but have received little support at school to improve their language skills.

Students who speak English as a second language [sometimes] arrived in school at thirteen, fourteen, [and they're often] given little additional support. There might be programmes in place but they're often quite limited.

General FEC, semi-rural, fewer than 1,000 GCSE students
Senior leader

For EAL students, difficulties occur in both English and mathematics. In mathematics, students may struggle to interpret questions, even if they have an excellent understanding of the mathematical processes required. Progress with language acquisition may be slower than expected if English is not the language spoken in the home and students have limited access to written English outside the college. For this reason, one college with a high proportion of EAL learners addressed this issue by buying-in literacy resources normally used in primary schools:

So we decided we have to go back to primary level. We're now buying in a whole load of books. We're going to start putting in book corners and book clubs and giving them, sort of, you know, reading challenges and things like that to get them reading. We're just doing that this term because we've just realised that without that, you really are struggling.

General FEC, urban, fewer than 1,000 GCSE students
Senior leader

A particular challenge experienced by some colleges with large numbers of EAL students is finding the time to provide additional support for them in addition to the GCSE classes they are required to study.

A few colleges have been able to structure their GCSE English classes in a way that supports EAL students. For example, teaching EAL students within the same class and having an experienced teacher to run these sessions. This enables the teacher to adapt the lessons as appropriate to meet the needs of the EAL students. The impact of this approach on exam performance is of yet unknown.

... We're just enrolling them on GCSE English, but we've tried to put them into one group, and the teacher of that group has EAL experience and has taught EAL courses in the past, and so is more able to tailor her teaching to their needs ... If it works, then we've hit on the answer. If it doesn't, we'll try something different...

Sixth Form College, urban, fewer than 1,000 GCSE
English and maths lead

This approach is dependent however on a provider's ability to coordinate EAL students' timetables in this way.

Past identification of special educational needs

A number of colleges say they are supporting a large number of English and/or mathematics students with additional needs such as learning difficulties or mental health issues. The most commonly reported learning difficulties in this study were dyslexia and autism. Several leaders and teachers report a perceived lack of support for, or under-reporting of, these needs in school that has made it more likely that such students need to retake their English and /or mathematics. A number of teachers said they received letters from parents or doctors on behalf of students explaining the significant anxiety the English and/or mathematics lessons and exams have on the learners.

The impact for teaching and learning strategies in FE colleges is that additional resources and pastoral support are required to identify and address these needs. A number of colleges had introduced a range of interventions to help meet the needs of students, including:

- Establishing a team to support students on the autistic spectrum in particular and help them to better manage their behaviour.
- Training teachers in dyslexia support techniques for them to share with staff. For instance, using different coloured pens and paper to keep students engaged. Such tools were also perceived to be helpful for non-diagnosed students.

... We've got a maths teacher that's doing it, and about three English teachers ... a Level 5 dyslexia course at university which ... we will be able to feed into the lessons more about what we've learnt, because really, we should be using those techniques with everybody. Especially with the resit students, because they've all had difficulty with remembering, with sequencing, with planning, all those kinds of things.

General FEC, urban, between 1,000 and 2,000 GCSE
English teacher

- Putting in additional support to help students with SEN undertake their exams, such as scribes or extra time to complete their paper.
- Holding mock exams in exam-like conditions, for example with external invigilators in large halls, and providing pastoral care to help prepare students for the event so they feel more confident when the actual exam day arrives.

... this year what we've planned to do, in both maths and English, is the mocks are going to be a couple of weeks before we break up for Easter, so they'll be marked and returned to students before they break up so they know exactly what they need to work on ... we do proper full-on

mocks in the exam rooms, so the Sports Hall is taken over, we have external invigilators in.

Sixth Form College, urban, fewer than 1,000 GCSE students
English and mathematics lead

Supporting English and mathematics learners with autism and Asperger's syndrome

General FEC, semi-urban, fewer than 1,000 GCSE students

This college has identified many learners who are affected by autism and Asperger's syndrome. Managers reported that these students are likely to have struggled with English and mathematics at school and therefore frequently have to continue studying these subjects at college. The college has therefore invested in a team to support the additional needs of these particular learners. The Further Education Autism Specialist Team (FEAST) is made up of specialist staff with expertise in autism and Asperger's syndrome. Students can receive support on site to support their behavioural and learning needs. Members of the FEAST team also attend English and/or mathematics lessons with the students if it is felt their support is required. Managers reported that the support of this team had helped increase the confidence of these learners and assist them in their progress to acquire English and mathematics knowledge and skills.

Geographical location

Impact on recruitment

The local mix of other educational providers can have a significant effect on the student body's composition. For example, a college may be based in a place with a large number of sixth form schools or colleges. In such cases, it is possible that those who just missed a Grade C stay with a school for further academic study, especially if they aspire to attend higher education. This can result in the FE college receiving a higher proportion of 16 and 17 year olds with lower D, and E or lower, GCSE grades (as evidenced in Table 2:1, p.22). In addition, DfE figures show that over half (54%) of students achieving a Grade D in mathematics move into FE colleges compared to less than a third (31%) who stay in school or go to a sixth form college.⁹ A variety of strategies to teach a broadly less able cohort were discussed in Section 4.

⁹ DfE (2017) *Post-16 mathematics participation in 2014/15*. Table 6. p.5. DfE. London.

Colleges with a large number of feeder schools need to maintain a larger number of institutional relationships, which creates an administrative burden. For example, the section on diagnostics notes that providers want pass marks (as opposed to the grades) need to get them from schools rather than the DfE or the Local Education Authority. Data on marks is extremely useful for teaching and learning as it shows how distant individual learners are from a Grade C and can inform appropriate intervention strategies. It is more difficult for providers to get consistent and timely information on marks and other existing data if there are more schools with which to engage. Senior managers of one provider in our sample explained the significant amount of time staff had spent in building relationships with senior staff in their 11 feeder schools to access marks data as early as possible in order to tailor classes accordingly. This college admitted however to being in the advantageous situation whereby the head teacher of its largest feeder school is a governor of the college and therefore fully aware of the implications of this information. Access to English and mathematics GCSE grades as early as possible enables colleges to accurately determine the ability of students and arrange the necessary support they require to progress in their acquisition of subject knowledge and skills.

Marketing local areas to attract English and mathematics teachers

General FEC, urban, 1,000 to 2,000 GCSE students

This college has struggled to attract interest from potential candidates when advertising English and mathematics teaching opportunities. It is financially unfeasible for the college to fund salary increases, so the college has considered alternative approaches. The college's senior leaders are working with the local authority's marketing team to promote the benefits and attractions of their locality in order to attract potential recruits from outside of the area. A link has recently been added to the college's website page about reasons to work for the institution which directs readers to the council's micro-website which promotes the area. It is hoped that this approach will result in increased interest in their teaching opportunities.

Impact on student travel

Colleges located in coastal and rural settings present travel challenges for students. The lack of frequent, regular and direct public transport links to colleges were sometimes a challenge. This was a particularly acute issue for students with additional commitments whether managing part-time work alongside their studies or caring for others. These issues had the potential to have a negative impact on students' attendance at English and mathematics lessons, especially in cases where students are travelling in just for these, or where timetabling resulted in a long period between an elective subject lesson and the English or mathematics class.

Mornings, getting teenagers here on time, is always a challenge as well. I mean, for us, unfortunately, now some of the buses changed, and sometimes the buses are late, so getting them here for 9 o'clock in the morning is quite challenging.

General FEC, semi-urban, fewer than 1,000 GCSE
English and mathematics subject lead

For providers in these situations, senior managers indicated a number of ways in which they had attempted to mitigate the problem and maximise the teaching and learning potential for these students, including:

- Scheduling English and mathematics lessons in the middle of day so students had the greatest opportunity to ensure they could use public transport to arrive and depart their lessons on time;
- Holding English and mathematics lessons on the same day as elective subjects to reduce the frequency for students to make an especial journey to college;
- Recording and updating students' profiles so teachers are aware of any extenuating circumstances which might impact on a student's ability to attend a class as anticipated; and
- Enabling students to attend alternative English or mathematics classes or workshops to which they are assigned in order to catch up on the lesson they have missed.

There are people that live out in rural areas that find it difficult to get home on time... We're looking at putting a matrix together next year. Timetables will be set at the beginning of the year, and won't be changed... We've said, 'No first thing Monday morning or last thing Friday afternoon sessions,'...

General FEC, semi-urban, between 1,000 and 2,000 GCSE
Senior manager of English and mathematics

Socio-economic conditions

Colleges based in areas with a buoyant job market can face recruitment difficulties of specialist teachers and managers. The impact for some senior managers was a struggle to recruit the English and mathematics teachers and/or relying on temporary staff. This was a particular issue for FE colleges with reputations or performance that was comparatively weaker than secondary schools and sixth form colleges in the area.

... Working for a college that was [an Ofsted] grade four might put people off. As we're now a grade three, we're hoping that will have a little bit of an effect on applications.

General FEC, semi-urban, fewer than 1,000 GCSE

This added to the existing challenges FE colleges usually face in these situations, for instance, lower pay, less favourable conditions, and unmotivated students. As seen in Section 4, providers have employed a number of mechanisms in order to recruit high quality specialist staff.

A strong local youth employment market can also have an impact on student attendance. Teachers and senior managers of colleges in economically vibrant areas reported challenges in persuading students, as well as their parents, in the value of English and/or mathematics. Students and parents who see their peers entering employment without a C in English or mathematics may be more likely to question the value of such qualifications.

Unemployment is quite low, there are lots of opportunities, and young people know that, and they see the opportunities and they know from families and friends that people have... got jobs, they're earning what many sixteen-year-olds perceive to be quite good money, and they haven't got those qualifications... We'll say, 'You'll never get a job when you leave here,' [but learners will respond] 'Well, actually, I've got a part-time job, and my boss says they'll keep me on after I finish here.'

General FEC, urban, fewer than 1,000 GCSE students
Senior manager

The type of actions taken in colleges to address these issues include teachers inviting parents to one-to-one meetings to explain the value of the subjects, providing online reporting¹⁰ for parents to access their child's progress, and employers presenting how and why English and mathematics are important skills for students to acquire. The broad purpose of such initiatives is to challenge the existing communication pathway to parents and employers that go via the student. Bypassing students to communicate directly with parents and employers is viewed by providers as a way of improving their overall engagement and interest in English and mathematics.

We put events on-, we've got one in February actually, where we'll have a range of employers come and work with learners and parents to sell what they want from English and maths within industry. That inspires our learners to kind of think, 'Well it isn't just the teachers telling us, it's the industry that's telling us as well.'

General FEC, urban, More than 2,000 GCSE students
Senior leader

¹⁰ Via an on-line tracking module call Markbook

4. Teaching practices that influence learning

Targeting learning using diagnostic approaches

It is common practice in FE for providers to carry out their own diagnostic assessments of students. These are normally undertaken during the enrolment and induction period since early assessment helps the provider with the allocation of students to appropriate mathematics or English classes and the planning of group or individual learning programmes. However, there is significant variation in the type of diagnostic test used by different providers and how the results are used. This affects the way in which diagnostic assessment influences approaches to teaching and the subsequent impact on student learning.

Test types

Diagnostic assessment is often considered as a two-stage process involving a formal test which is then followed by a more extended period of informal assessment through classroom activities. Some providers incorporate both stages into their planned approach but there is greater reliance generally on diagnostic testing and its early use in the student programme.

Proficiency in English and mathematics

Diagnostic tests are most often used to determine:

- The level at which a student is working in English and mathematics at the time of the test (more of which below);
- Their existing knowledge of the subject content;
- Their proficiency with routine tasks; and
- Gaps in their subject knowledge.

Most providers use commercially produced computer programmes, although some have their own systems. The main functions of all systems is to provide an assessment of student knowledge *at the point of the diagnostic*. However, some provide additional functions in relation to teaching and learning. For example the system may generate targets for students to work towards, or provide linked self-study materials and monitor student progress towards internal targets.

Using diagnostics in lessons to identify areas of weakness to tailor teaching approach

General FEC, semi-urban, 1,000 to 2,000 GCSE Students

At this college, GCSE English resit students were encouraged to develop their language acquisition by using different vocabulary to express themselves. To ensure the learners had comprehended the lesson as intended, the English teacher employed sticky notes for learners to check what they had learnt. This aided the teacher to ascertain the gaps in their knowledge; these gaps were noted to be followed-up during the next English lesson. This spiral approach to curriculum design (where students revisit the same topics with increasingly complex learning goals) promoted a student-driven delivery. The teacher-directed methods of secondary education were replaced by a democratic approach in which the teacher listens to the voice and needs of the learner. The learners responded well to the teachers' open and receptive manners.

GCSE level at the time of the diagnostic

Providers make use of students' prior attainment at GCSE level in planning their English and mathematics programmes. Achieved grades are used to determine whether students are enrolled on a course to re-take the GCSE examination or take a Functional Skills qualification. They are also used to make an initial judgement about the level of Functional Skills qualification to be taken. There is however some variation in decisions about the type of qualification a student takes due to differences between the internal policies of individual providers. Although all providers place students with a Grade D on a GCSE course, some choose to re-enter those with lower grades, with the aim of improving a grade over a longer time, and then resitting again rather than placing them on an alternative qualification such as Functional Skills. The reasons for entering at lower grades are covered in more detail under *Choices about GCSEs and Functional Skills*, (p.81) and are primarily due to college ethos, a preference for longer-term approaches to developing English and mathematics skills and perceptions about the Functional Skills qualification.

Students' prior attainment at GCSE is a valuable source for programme planning but providers report that the grade alone is an unreliable indicator of student ability. Diagnostic test results suggest that there are wide variations in the knowledge and understanding of students who have achieved a Grade D, and that there are large differences in ability between those who have followed a Foundation or Higher course. With students coming from a range of different schools, there are noticeable differences in subject knowledge, particularly between those using different examination boards.

Providers report that detailed information on actual exam marks, rather than just qualification grades, would be very useful, but that this is not readily available from a central source when it is needed early in the year. At the time of the research, providers needed to make a request to each individual feeder school to get the achieved mark for the learner. The value of the mark is that it more precisely locates a learner within the overall Grade D band and can identify those who were the closest to a Grade D. Such students are typically better able to take an early resit.

Many providers still find that their own diagnostic testing is a more reliable indicator of current knowledge level since there is frequently a drop in level during the summer break between the GCSE examination and the start of their post-16 programme.

Teacher-led diagnostics based on lesson observation

Teachers use activities of various types in the classroom as diagnostic assessments to highlight areas where individual students still have weaknesses in their understanding. During our lesson observations and in our interviews with teachers and learners we identified the following variety of activities taking place in classrooms to identify gaps in students' English and mathematics abilities:

- Asking students to explain their answers, questioning them and noting the weaknesses;
- Using a quiz type activity, often with online software, such as Kahoot,¹¹ which allows teachers to develop their own questions and enables them to identify which topics the class and/or individuals are struggling to answer;
- Holding a whole class discussion about a topic to determine what students already know about it;
- Using questioning and answering techniques to draw out student understanding and misconceptions in a whole class discussion about a completed or attempted task;
- Asking students to use 'traffic light' cards or rate their position on a spectrum to indicate whether they have understood a lesson or not; and
- Doing a quick check on learning by asking students to show their answers to some short questions on their mini-whiteboards (this approach also means that students lacking in confidence do not have to shout out their answers in front of their peers)

¹¹ See: <https://getkahoot.com/how-it-works>

Through these activities the teachers are able to tailor their lessons to provide the skills and knowledge required to address these weaknesses.

Using whole class discussion, student work and mark schemes in a formative approach

General FEC, urban, fewer than 1,000 GCSE students

The college management identify three key issues for teachers when planning lessons for students who are resitting English and mathematics: student motivation, prior attainment and the academic nature of the GCSE qualification. Given the breadth of the GCSE specifications and the prior attainment of students, whose ability is often lower than their GCSE grade might suggest, the priority is to make the most effective use possible of the limited teaching time available in a one-year course. Teachers have dual aims in their teaching since they understand the need to develop students' skills but also to prepare them for the examination. Sometimes examination preparation is seen as a separate activity to actual learning but this does not need to be the case.

In one mathematics lesson the teaching approaches demonstrate how a lesson can combine the consolidation of conceptual understanding with examination preparation, whilst also incorporating valuable formative assessment opportunities. In the lesson students revised how to work out the coordinates of points on a straight line from an equation through a class discussion and then attempted a set of written questions. Although students produced individual solutions, they were encouraged to discuss and check their answers in small groups. This peer-checking means that students compare their work, reflect upon and identify their own errors and either gain understanding from others or benefit from having to justify their own solution. The teacher observes progress and intervenes when needed to clarify understanding. A student is then asked to write their solution to a particular question on the whiteboard, with all their working. Their peers check the solution and are invited to offer comments on how many marks the question would be awarded according to a given mark scheme. This leads to a class discussion about what could be improved and why the student would not gain full marks, with prompts from the teacher about important details that the students are finding hard to see. The process allows students the opportunity to reflect on their own work and develop a better understanding of the concepts, whilst also increasing their knowledge of how to gain better marks on examination questions.

The students of one FE College in a semi-urban setting each have a book for their English and/or mathematics lessons in which they record the topics they cover in class and how they found them. The students record, using a 'RAG rating' (traffic light system), their confidence with a particular topic before covering it in a session and then again after

the session has ended. This system provides the learner and the teacher with a useful record of the student's progress and enables them both to identify which topics the learner finds more challenging so more time and effort can be focused on these areas to increase their knowledge and skills. This gives students the opportunity to raise with teachers any concerns about their areas of weakness without voicing them in front of their peers. This is perceived to give the learners more confidence to admit any problems that the teacher can then address.

[A log book is] just a running record. It also gives the member of staff an idea, because [the students] have RAG-rated themselves at the beginning and at the end of the session, how that student's progressed. So, it's a more discrete way of perhaps a student, sort of, saying, 'I'm still struggling with this.' So, they can use it to inform their teaching and students can set themselves individual targets.

General FEC, urban, between 1,000 and 2,000 GCSE

Senior manager

Uses of and potential for diagnostic assessment in teaching and learning

Given the variation reported in knowledge and understanding across even one GCSE grade, it is not surprising that providers rely heavily on diagnostic tests to inform their organisation of classes and plan their teaching approaches. The extent to which this is possible is influenced by other factors such as the size of the provider, the structural organisation of English and mathematics and the available financial support (see Section 5). Most providers, however, aim for levelled rather than mixed ability classes for English and mathematics where this is possible within these constraints. This allows for a more targeted approach to addressing individual difficulties but still requires some differentiation.

Identifying variance in existing knowledge for differentiation

The results of diagnostic assessment are often used by teachers to make adaptations to their teaching and therefore become part of a formative assessment process. Group profiles inform teachers about topics and concepts that need to be prioritised for the whole class and make adjustments to their schemes of work accordingly. Individual needs that become apparent from diagnostic assessment are addressed through the adoption of differentiated approaches.

Creating summary profiles of students in each class so teachers can tailor classes to meet their needs

General FEC, urban, 1,000 to 2,000 GCSE students

GCSE English and mathematics students are taught in classes based on their elected curriculum area with limited streaming. Where possible, students with a Grade D study with those who achieved the same grade, and the same for Grade E students. A sheet with a summary profile of every student in the class is created so that the subject teachers are aware of, and able to teach to, the more specific needs of students. This sheet includes the following information: name with accompanying photo of the student; previously achieved grade in the subject; anticipated target grade at the retake; marks achieved in any internal progress assessments; information regarding any educational and/or health needs; and an update on attendance, behaviour or performance issues. The latter could include concerns which could affect the student's capacity to learn, for instance, low confidence, parental responsibilities, demonstration of high achievement potential. Senior managers reported that the profile sheets allow teachers to quickly refer to and understand the context in which each student in a class is trying to learn. This enables teachers to adapt their teaching methods to best suit the needs and/or learning styles of the students. Learners interviewed indicated that they feel more confident to participate in class because teachers at college understand their individual needs more than they had experienced at school.

In one example, a teacher set several different tasks during a mathematics lesson that involved card-matching, categorising and other learning activities. Students worked in pairs on a task that was chosen by the teacher to help them address an identified area of weakness. The students worked together, with occasional intervention by the teacher, to discuss their given task. In this way individual areas of weaknesses were targeted by the selection of appropriate tasks, in conjunction with a collaborative approach to learning that helped students deal with their misconceptions.

Identifying gaps in knowledge of topics

Several teachers with experience in schools highlighted how the approaches taken with a resit class differ from the ones they might take with Year 10 or 11 GCSE pupils. The differences relate to the assumed level of knowledge and the time allocated to students. In an FE setting, there is a greater need to identify and address areas of weakness rather than the school approach to aim for complete 'coverage'. Diagnostic assessment provides valuable information on students' prior knowledge and highlights the priority areas for a group or individual.

Teachers who work at the same institution often have a common scheme of work that is a useful resource for planning. In some cases this is followed rigidly but in others individual teachers have flexibility within a two- or three-week timespan to spend more or less time on a particular concept or topic, depending on the needs of their group. This allows the teacher to take a more targeted approach to suit the needs within their group without losing the benefits of working in parallel with other staff (see, for example, the discussion on departmental structures in Section 5).

Identifying classroom and examination support needs

Many providers identify the need for students to access extra support with English and mathematics, both in and outside their normal classroom. A diagnostic approach focused on the individual identifies the additional support needed by students with specific learning difficulties. It also acknowledges that individual students may require some short-term or continuing support with English and mathematics in addition to their normal timetabled sessions.

The way in which this extra support is provided varies between providers. Many teachers encourage students to come and ask them questions if they do not understand and therefore spend time outside their timetabled classes providing ad hoc support on a voluntary basis. Other providers, particularly those with large student numbers on one site, organise a workshop facility where students are referred and encouraged or mandated to attend if they appear to be struggling. Here they can access one-to-one support whilst undertaking additional work. The extent to which a provider can timetable such workshops depends on their finances, resources and the availability of staffing. In the best cases, workshops are staffed by trained teachers who are familiar with the syllabus and the students. However, this tends to require a significant level of resource and a good financial standing to implement effectively.

For example, one provider employs trained teachers as support staff for English and mathematics workshops but the same staff also provide in-class support. These support tutors develop positive relationships with students in classes and are aware of those who need additional help. The support tutors liaise directly with the teachers and can personally invite students to attend a workshop at a time when they will be present. This encourages the students to access the extra help available. The continuity of the students' learning experiences in this case is particularly valuable since working relationships are already in place and the support tutor is familiar with the students' needs.

Assigning a learning support tutor to each curriculum area to provide the right level of support and teaching to SEN students

General FEC, urban, fewer than 1,000 GCSE students

The college receives a statement of educational needs for students from schools and provides such students with a diagnostic interview. This identifies the nature and severity of their difficulties (such as mental processing speeds, spatial awareness, speed of writing, etc.). Data is input into class profiling tools (the college uses ProMonitor) and icons are assigned to the student profile for use in the classroom. Around 90% of learners with learning difficulties in the college are identified in this way. The remainder are identified through classroom observations by teaching staff or by learning support staff operating in classrooms.

Ensuring the right level of support for students with learning difficulties is important to be able to deliver the appropriate teaching and learning strategies, and to operate within Joint Council for Qualification guidelines. The college assigns a learning support tutor to each curriculum area to act as a single point of contact for a given department. In this way, there are clean lines of communication and responsibility between curriculum staff and learning support tutors which minimises the likelihood that support is not provided where required. Providing data to teachers on students' learning difficulties allows them to provide the right amount of differentiation in class. It also means that learning support tutors can work in the classroom as necessary to support individuals and/or groups of students with the same learning difficulty.

Diagnosing previously unrecognised or unrecorded learning difficulties also means that extra time or support can be provided if needed for examinations. This gives the target students a more equal chance of achieving the grade required.

Providers who struggle to recruit sufficient teaching staff may, however, have difficulty finding suitably qualified and experienced staff for an additional workshop. Also, in some cases, the provider is only able to provide such workshops if staff undertake this extra work on a voluntary basis as an addition to their normal timetable. The variation is dependent on internal college policies, which are sometimes influenced by the financial

position of the college and the extent to which senior managers are able, or willing, to divert funding towards such additional provision. In one college workshops are available throughout the week, including the lunch break and students can attend at lunch time to participate in more recreational activities involving English and mathematics as well as access extra help with specific topics. The availability of workshops across the week means that all students can access the extra support and the lunch time sessions contribute to a strategy to make English and mathematics both attractive and part of students' wider college experience.

Some providers make use of a VLE or other computer-based self-study materials to augment the teaching and learning that takes place in timetabled classes. For example, in one case, students regularly used part of a timetabled session for individual work on the materials provided as part of the diagnostic assessment package. They worked towards individual targets generated by the system on a pre-set package of on-line resources linked to their individual targets. By engaging with the system in class, and having targets to achieve, this became an integrated part of their programme and encouraged students to undertake further work outside class.

Assigning additional resources to classes

Providers are often aware of a high level of need within English and mathematics classes for additional support but not all of the students who demonstrate this need are eligible. Where a student is assessed and does qualify for additional in-class support then, as per requirements, an additional support tutor attends classes, often to provide one-to-one support. In some classes however students have assessed needs that do not qualify for additional funded support, or demonstrate a higher level of need for support in their English and/or mathematics lessons that can be provided by the teacher in a normal class setting. Some providers provide in-class additional support tutors anyway for these students, sometimes for a group of students rather than one-to-one, even though this incurs additional costs for the provider. The financial capability of the college is therefore a factor in whether students receive sufficient in-class support or otherwise.

Early entry into examination / intensive study periods

A diagnostic approach is also used by providers to identify when students will be entered for their GCSE or Functional Skills examination. Students who are entered early and who pass gain the satisfaction of achieving, and they no longer need to attend English or mathematics classes. This reduces class sizes and therefore allows teachers to concentrate on those who still have significant improvements to make in order to reach the required standard. Selecting which students may or may not enter early often relies on a diagnostic process, using a test or the students' actual GCSE mark, to determine the improvement needed and the likelihood of achieving this in a short timescale.

Application of insight gained from diagnostics to teaching and learning

Providers have different strategic approaches to the use of diagnostics and this affects the way in which teachers utilise the data in planning their teaching and learning. Some of the main strategies used by providers that have an impact on students learning are described further in the following sub-sections.

Strategies for increasing motivation

Addressing demotivation and negative self-perceptions of ability in English and mathematics are central to classroom practice on GCSE resit and Functional Skills courses. Teachers use a number of strategies to shift students' thinking but the need to provide a contrasting learning environment to that experienced by students in school is a fundamental principle that underlies many of the successful strategies.

Changing the nature of the teacher – student relationship

The transition from a school environment to an FE college is accompanied by changes in organisational culture that present opportunities for a different classroom approach to learning English and mathematics. In particular, the traditional 'adult' culture of a general FE college is commonly referred to by teachers as a strong influence on the approaches used and an aspect that helps them provide an alternative classroom environment that is accessible for students.

This leads to a significant shift from a formal teacher-pupil relationship towards an adult-adult relationship in the classroom. Students are encouraged to question and discuss English and mathematics with their teachers and take some ownership of their own learning. This form of relationship is welcomed by students and often facilitates greater participation in lessons.

However, a number of interviewees discussed the difficulties they faced in recruiting and general staffing levels. The success of a teacher – student relationship depends on continuity and the same teacher(s) in lessons over time. This is difficult to maintain if, for example, the provider is relying on agency staff to deliver GCSE lessons, or in cases of high staff turnover.

Addressing student motivation in the classroom

Students often find it difficult to understand the relevance of the English and mathematics that they are being taught. This attitude is typically more prevalent amongst students who are taking GCSE English and mathematics, particularly those already working towards the new specifications. Teachers work hard to emphasise the value of English and

mathematics in their lessons, but efforts to convince students are most effective when also reinforced consistently by other staff across the college.

Some of the vocational staff [have] really achieved in their vocational area and they've been very successful ... the elephant in the room, to a certain extent, is that they've got where they've got without English and maths themselves.

General FEC, urban, fewer than 1,000 GCSE students
Teacher

Developing self-belief and raising aspirations

General FEC, urban, fewer than 1,000 GCSE students

This college recognises the importance of students developing confidence and self-belief in their ability to achieve a better understanding of mathematics and English, even though they have struggled in school. The development of these personal qualities is viewed as a key aspect of motivation and part of the college strategy to improve student attendance for English and mathematics. Teachers report high levels of anxiety about English and mathematics and a primary aim is to provide a supportive classroom environment, so that those who see themselves as failures have an opportunity to “turn themselves around”. The college draws on the psychology associated with ‘growth mind-set’ to help students build confidence, resilience and responsibility for their own learning. In the first few weeks of the course, students in mathematics lessons engage with ‘rich’ tasks that require problem-solving skills and also discuss the ways in which successful high-profile figures in the media, such as sports stars, have gained personal success. Students are shown how to get footholds into solving problems and also how making mistakes can become an opportunity to learn rather than be seen as failure.

Teachers aim to use learning activities that are fresh, varied and often different to those used traditionally in school, so that students can experience alternative approaches and make choices about their preferred methods. In one mathematics lesson, for example, students were introduced to the ‘Singapore bar’ method to tackle fraction questions but were then encouraged to make their own decisions about which method to use. This approach encouraged students to take responsibility for their own learning but within a safe and supportive environment. College subject leaders emphasize the importance of teachers knowing their students and understanding how they work best so that they can be appropriately supported. Lunchtime workshops also play a part in this approach by providing ‘catch up’ opportunities and a quiet space to spend extra time on English and mathematics with teachers on hand to guide and support.

Some providers have invested significant time and effort into developing a positive image of English and mathematics across the whole college. This 'whole college' approach has included professional development sessions for vocational teachers so that they promote English and mathematics in their own lessons, make connections that reinforce the relevance of English and mathematics, and actively encourage students to attend their English and mathematics lessons. Some providers also provide opportunities and encourage vocational teachers to improve their own English and mathematics skills. This develops those who are less confident and avoids subliminal messages that communicate negative perceptions of English and mathematics to students.

The development of a positive image of English and mathematics consistently across an organisation is most effective when a 'whole college' approach is led and monitored by an enthusiastic senior leadership team. Some senior leadership teams include English and mathematics as a standing agenda item for their meetings and others describe their approach as very 'hands on'. One college with a coherent and positive culture regarding English and mathematics describes how this has been the result of work over several years but eventually students have largely accepted that English and mathematics are important. Another college has a governor with a designated responsibility for English and mathematics to support the work by the leadership team. Student perceptions of the importance of English and mathematics in the classroom are therefore often indirectly connected to the level of involvement of senior leadership.

English and mathematics for progression

Motivation to study English and mathematics may arise from a need to gain a higher grade. Where this is linked to a personal career goal or aspiration (such as progress into higher education) then the progression value of the GCSE provides some motivation to engage with learning and achieve. Where an individual cannot make this connection then the subject can lack relevance and personal value even though the general worth of a better English and mathematics qualification may be acknowledged. In this case the motivating factor is weaker and it becomes more difficult to engage students in learning.

Addressing the impact of personal experiences on motivation

Students are also subject to influences from their lives outside college and these may conflict with the values promoted by the provider. For example, in one suburban area, a provider reports that some vocational students fail to see the benefits of gaining a better qualification in English and mathematics because their parents have been financially very successful in skilled trades and have achieved this without these qualifications.

Students are often influenced by such attitudes to English and mathematics even if they are not stated explicitly and many providers work hard to convince their own vocational staff of the value of English and mathematics so that students receive a consistent positive message.

In another nearby suburban area, with a different socio-economic constitution, managers explain that students are often well-motivated because they see education as the route to a better future. A provider in a very different geographical area reports that one of their main hindrances is parental resistance to students taking English and mathematics courses. Parents frequently complain about their children having to attend, due to concerns about the personal stress it creates. Parental attitudes clearly vary across the country, along with local socio-economic factors, and providers have to deal with these local issues that influence student motivation. Where providers understand the local issues then they are able to develop appropriate strategies to deal with these. For example, one college¹² described how its curriculum teams call parents of poor attenders the evening prior to English and mathematics lessons as a reminder. As per the earlier discussion under the heading GCSE Level at the time of the diagnostic (p.40), the purpose of direct contact is to challenge the existing perceptions of English and mathematics amongst parents.

Past experience of teaching and learning in school

Students' accounts of their experiences of learning English and mathematics in school are often, but not always, negative. They refer to a number of common factors that have influenced their attitudes and dispositions towards these subjects. For students who have not attained a GCSE Grade C or above, their lack of understanding in school often led to a sense of alienation or 'not belonging' in their English or mathematics classroom. Students refer to a lack of individual attention in lessons or sufficient access to support to help them with their difficulties. The pace at which the class was expected to work often left these weaker students moving on from topics before they had fully grasped the concepts and processes involved. Perceptions of not being good at English or mathematics compared to their peers and unable to make progress, result in feelings of being disempowered and highlight social perceptions that mathematics, in particular, is an 'elitist' subject for which you either have a natural aptitude or not.

Students value the efforts made by teachers in post-16 education to deal with these barriers and provide a more positive experience. Many students, although not all, believe that they experience more individual attention from their teachers in colleges. The individual attention is one of the main reasons that many students believe they make better progress in post-16 education with their understanding of English and mathematics. Students themselves comment on the way in which smaller class sizes give them more opportunities for one-to-one interaction with the teacher.

¹² General FEC, urban, good pass rate in English and Mathematics, fewer than 1,000 GCSE students; Senior Manager

The smaller classes are very helpful because it's more like a one-to-one basis but at school it's a really big class.

General FEC, urban, 1,000 to 2,000 GCSE students
Learner

Smaller class sizes assist teachers in providing this individual attention, although financial pressures and staff shortages mean that many providers have difficulty keeping classes at the size they deem appropriate for the students' educational needs.

In terms of finances we have to have quite big class sizes which is a big problem when you're in some of the lower level groups but there just isn't the funding to be able to cater for that many lower level groups other than in foundation learning with higher needs learners.

General FEC, urban, fewer than 1,000 GCSE students
Senior leader

There were frequent references to teachers demonstrating alternative methods to students and persisting until they understand a concept or process rather than moving on. When students experience even small gains in understanding and some success with learning, then this is a positive step from which they gain confidence and are encouraged to progress further.

Teachers often identify deficits in students' skills (e.g. reading, spelling, fractions, percentages) or in their understanding of fundamental concepts that constrain progress. Some teachers prioritise the development of such skills since progression is difficult without a secure foundation of basic understanding. Teachers often express concerns, however, that time pressures restrict the amount of 'remedial' work on fundamental concepts and processes that they are able to provide, despite the level of need. Providers have serious concerns that the lack of basic skills means that student learning is often building on insecure foundations and that this result in an over-reliance on memorising rather than understanding.

In some lessons, starter activities are used effectively to reinforce basic conceptual understanding in the form of collaborative activity, quizzes or card matching. These types of activities prove engaging for students and help reinforce basic skills on a regular basis. Despite the time pressures, teachers try to spend time addressing these basic problems in class and refer students to additional workshop sessions where these are available.

Getting English and mathematics "out of the way"

Despite the efforts of providers to promote the value of English and mathematics and the work by teachers to make lessons interesting and productive, students were often very keen to succeed simply because they then no longer needed to attend the lessons. Some providers therefore have adopted the approach of offering students an early

examination entry (e.g. resitting in November rather than June) as a reward for reaching a satisfactory standard of work, since early examination entry may lead to success and would then result in the student not having to attend classes any more. Similarly, some teachers encourage students to work hard so that they achieve a Grade C within the year and do not have to return for a second (or third) year of resitting English and mathematics.

Although sometimes effective as a short-term motivating factor, this approach is not entirely harmonious with the message that most providers are trying to promote, which is that English and mathematics are important subjects. The approach highlights the importance of achieving at least a GCSE Grade C but does not emphasise the continuing value of English and mathematics in students' future lives or careers.

Impact of motivation on behaviour

Students with low motivation to study English and mathematics exhibit various avoidance behaviours ranging from a refusal to attend classes, or the creation of disruption in class, to a passive non-participation even though the student attends the lessons. Attendance is a key concern for providers since students who do not attend their English and mathematics classes are unlikely to improve their knowledge and skills and this inevitably leads to an unsatisfactory result even if these students actually sit the examination.

All providers have attendance monitoring systems in place that lead to actions such as reminders (phone call or text), official notifications (to parents), disciplinary procedures or

Communicating to students three key messages about English and mathematics to increase their value of the subjects and attendance in lessons

General FEC, urban, 1,000 to 2,000 GCSE students

Teachers and managers at the college recognise that some students having to re-take English and/or mathematics exams do not appreciate the importance of the subjects and are disinclined to attend their lessons. Early in the academic year staff therefore try to communicate the value of the subjects to new students having to continue studying English and/or mathematics. The staff concentrate on highlighting the importance of the subjects to students' everyday life, their main study programme, and their future career progression. The teachers and managers attempt to convey these messages in a way in which students come to value the subjects without feeling lectured. It was suggested that this was achieved through class discussion and debate in which students participate and teachers re-iterate the key messages at the end of the lesson. The approach appeared to be effective with one student interviewed during the site visit recognising that the subjects were necessary to his future ability to become an apprentice.

You need your Maths and English in the future, don't you, so it's good to get the opportunity now than doing it in the future.

Learner

a range of sanctions. For example, one provider organises enrichment trips that the students generally find interesting but only if attendance for English and mathematics is satisfactory.

Other providers offer rewards for good attendance so that the messages to students are not all about punishment, and there is some evidence that this has a positive effect. These include recognition rewards such as certificates and financial incentives such as Amazon vouchers for 100% attendance in English and mathematics.

Despite considerable effort to encourage attendance, all providers report that the number of serial non-attenders and sporadic attenders is a serious concern and has an impact on pass rates. As one teacher explains, the ultimate sanction is to exclude the student but this is not consistent with their overall aims and therefore providers are reluctant to implement this.

Providers also highlight that some of the frequent non-attenders have personal circumstances beyond their control that prevent them from attending, such as issues with homelessness, mental health, trauma (e.g. from being the victim of a recent mugging),

being the main carer for a parent with poor health, or being responsible for their younger siblings after school.

Another strategy used by providers is to make English and mathematics lessons more attractive to students so that they are better motivated to both attend and participate. Managers aspire to having interesting and stimulating lessons for all English and mathematics students but the difficulties of recruiting sufficient staff mean they cannot always find teachers with these qualities.

Also, it's about you wanting the most engaging people. You've got, you know, as I say, the young people who have struggled with their maths and English, and they really need people who, you know, can hit the right note, and maybe have a bit of charisma about them, but can also teach, you know, properly and sensibly as well, at the same time.

General FEC, urban, between 1,000 and 2,000 GCSE
Senior leader

In addition to the behaviours already described, poor motivation can affect attendance at the actual examination. This is a final hurdle that causes some concern for providers since even the students who have attended lessons and engaged with learning may choose not to attend for the examination. In particular, students with on-going anxieties about English and mathematics or a fear of examinations often need persuasion to attend.

Some providers use strategies such as revision mornings immediately prior to the examination to encourage attendance and relieve anxieties. Teaching staff are often present to support students before they enter the examination room and some providers offer refreshments in an informal environment prior to the examination to help students relax. One provider is contemplating offering a "straightforward financial incentive" for attending the examination because around 100 students did not attend last year despite significant efforts to encourage them. This is, however, a costly option when large numbers of students are involved.

Leveraging motivation to improve teaching and learning outcomes

Students gain motivation when they experience success and many teachers incorporate strategies to highlight success to empower students and increase their motivation. This may include the breaking down of learning into chunks so that students can experience success with one of these chunks rather than fail overall with a longer task. Positive reinforcement of student efforts and praise for even small gains also contribute to greater confidence and better motivation.

I feel like it helps as well that we get praised a lot. Especially me, because when I first came here, I was right at the bottom, at Entry Level 3. I was a bit gutted,

because then I'd have had to do three exams, so I'd have had to be here for three years. Then in two months, I've moved up to Level 1 already, so it's nice to know that a teacher has faith in you. For them to turn around and say, 'Yes, we're ready for you to go to Level 1,' I feel like it's quite rewarding...

General FEC, urban, between 1,000 and 2,000 GCSE

Learner

Breaking down lessons into connected activities to ensure engagement

General FEC, urban, 1,000 to 2,000 GCSE students

At this college GCSE English and mathematics students are taught in classes based on their curriculum area and last for 90 minutes. Teachers structure the lessons into distinct tasks, as follows:

- *Initial summary:* Using PowerPoint, students are provided with an initial summary of what the lesson will cover. Learning outcomes are explained and tasks are broken down into constituent parts. In most instances teachers draw a specific link to the GCSE exam question to which the lesson relates.
- *Competitive element:* Activities vary based on the subject. Observations included an online maths quiz using *Kahoot!* This software allows students to answer questions using their smart phone. Staff can analyse how quickly students answer particular questions and identify areas of additional support.
- *Group activity:* Group activities vary considerably. Activities observed included students discussing in pairs 'what is writing used to inform?' and use peer assessment to mark the work before then feeding back to the class.
- *Recap activity:* All classes finish with a recap activity. Activities observed included students undertake the '60 second challenge' and writing down the two most important things they have learnt in the lesson.

Teachers interviewed explained that the lesson structure has been designed to ensure that students remain engaged throughout the class. They indicated that the regular change in activities provides them with opportunities to use different teaching methods to target the specific needs of students and engage them for longer whilst still ensuring that they are able to cover the necessary topics of the subject curriculum. Learners interviewed were also positive about this approach reporting that they find their lessons to be considerably more enjoyable than those at school.

Pedagogical approaches

The pedagogical approaches used by teachers in FE are varied. These sometimes reflect either an instructional approach or, more often, a mixed pedagogy based on both

individualised and collaborative methods. This variation is not surprising, bearing in mind the difficulties providers may have in recruiting teachers, particularly for mathematics. When providers struggle to recruit teachers then inconsistencies in quality and effectiveness are inevitable.

Yes, recruitment of good teachers is extremely difficult. We are reliant upon agency teachers to an extent, because, you know I don't get enough applications to fill my permanent posts. The staff that I get, I'll be honest, aren't great. Particularly around maths. You know, their own skills aren't absolutely secure. They don't, for the most part, have innovative teaching delivery.

General FEC, semi-urban, fewer than 1,000 GCSE
Senior leader

Many teachers place a clear emphasis, however, on addressing the needs of the individual student and using the result of diagnostic assessment, as explained earlier. Most teachers utilise data from diagnostic assessments to some extent to adapt their teaching and use this information formatively but some also make effective use of formative assessment throughout the course. This includes formative assessment as a fundamental pedagogical approach in every lesson (through class discussion, collaborative work with peers, peer assessment and self-assessment) as well as the use of periodic tests that inform future teaching. In addition curriculum managers and subject leads explain how they look for new teachers who can build relationships and be innovative so that interest is captured and students engage with learning activities.

Planning teaching and learning to engage students

The intentions of curriculum managers and subject leaders for English and mathematics are focused on students passing examinations but, in order to achieve this, they understand the need to develop teachers who can engage students.

... We want to be seeing innovative teaching methods. I want us to be seeing active learning, I want the students up and about. If you get them engaged you're more likely to get them to achieve, because doing worksheets is something that they've done for a long time and it's not, obviously, been a successful strategy ... if they're doing things like that they're not going to turn up to the sessions.

General FEC, semi-urban, fewer than 1,000 GCSE
Senior leader

In another college, subject leaders talk about a similar need to make learning English and mathematics lessons fun through using active learning approaches and contexts of interest to students. Examples of active learning in classrooms include students adding their own adjectives on sticky notes to photographs displayed around the room, and collaborative work on card-matching activities such as 3-way arrangements of terms,

meanings and examples in English or values expressed as fractions or decimals in different forms.

Providers have some success in engaging students with learning activities when contexts are used that will interest students, whether these are contemporary topics or not, and by making lessons relevant to learners' core subject of study. For example, students in one English lesson discuss their opinions on school proms before shaping their ideas into an article for a school magazine. In another lesson students talk about whether a housing estate should be built on college grounds and then develop their own articles for a local newspaper. Similarly, carpentry and joinery students engage with writing an article about apprenticeships in their English lesson. An additional approach observed and reported in the interviews was for teachers to link English and mathematics lessons to students' vocational courses to help engage them.

We do try to deliver within a faculty so that we can contextualise because that sometimes is a good hook for English and maths.

General FEC, urban, fewer than 1,000 GCSE students
Senior leader

Making mathematics lessons relevant to learners

General FEC, urban, over 2,000 GCSE students

Mathematics teachers at this college recognised that some of their learners needed encouragement to understand the value of continuing to study the subject and be motivated to learn. One teacher sought to make their mathematics lessons more relevant for the hair and beauty students they taught. In order to help these students understand algebra and its potential use in the learners' future careers the teacher substituted key elements of equations, 'x' and 'y', with meaningful objects, 's for shampoo' and 'c for conditioner'. By adapting the exercise in this way the teacher believed that the students better understood the use of algebra and were more motivated to undertake this and other mathematical exercises.

So, for an example, when we're doing algebra, I'll compare it to shampoo bottles or conditioner bottles and go, 'So, you've got a bottle of S. You've got x amount of customers, so how many S's do you need for so many customers?' So, then they go, 'Oh, right. I understand that now where you're going.' Let's get rid of x and y, let's use shampoo and conditioner or hair dye and something else to get them to see the relevance of it. It's about getting that hook with them to see why they're doing what they're doing. It's using different ways to grasp that hook.

Although this is a successful strategy, the difficulties of timetabling and the constraints of the GCSE curriculum mean that many providers are unable to utilise this approach with resit classes.

Personalisation and differentiation

The differences between students' in their prior knowledge, conceptual understanding and skills gaps is a major challenge for teachers. Some providers attempt to 'level' classes but many find that this is not possible within the constraints of timetabling large numbers of student groups across multiple different vocational areas. Many teachers rely on differentiation within the classroom to ensure that individual learning needs are met and this is approached in several ways.

For example, teachers may provide a number of different tasks during one lesson that focus on the same topic but are differentiated by level. Individual students are offered the task that best fits their current level of working and identified weaknesses. Alternatively, students are asked to work collaboratively in pairs or small groups so that students who are stronger with different aspects of the task can discuss and learn from each other. This is most effective when the pairs or groups are carefully constructed to be able to support each other and when the roles of individuals within the group are clear so that the goals of the activity are clear and all members contribute.

Another approach is for students to work collaboratively in pairs or small groups so that students who are stronger with different aspects of the task can discuss and learn from each other. This is most effective when the pairs or groups are carefully constructed to support each other, when the roles of individuals within the group are clear and they have specific goals to achieve as a group. In these cases, students in the group are more likely to make equal contributions and fully participate.

Addressing variations in prior knowledge

Students who have had very different prior learning experiences do not necessarily have the same body of knowledge or similar skills, even though their GCSE attainment may be at the same level. These post-16 students have been educated in different schools, not always in the local area or even in England, and this influences the emphasis in the curriculum and the examination boards used, which have different requirements. This means that there will be very different gaps in student knowledge and skills across a group. For example, students with a GCSE Grade D from one school felt that there were mathematics topics that they were encountering for the first time in college whilst others with a Grade D from a different school were already confident with these topics. Individuals who may be assessed as working at largely at Level 1 by a diagnostic test but may demonstrate Level 2 skills in some areas but only Entry Level in others.

Teachers recognise the importance of dealing with students' weaknesses rather than, for example, trying to teach the entire GCSE content in a very limited time. Addressing the variability in students' weaknesses is challenging however and providers approach this in different ways. Some providers use a common scheme of work but with some flexibility so that teachers can spend more time on topics, depending on the needs of their groups, but still be reasonably synchronised, for example, within a 2 or 3 week period. Other

providers do not use a common scheme so that teachers can make their own decisions about how long to spend on one topic. Another approach is to make use of software that generates individual targets and provides materials for self-study for part of a teaching session each week, or provide materials on a VLE for students to use outside lessons to address individual needs.

Using alternative new methods to facilitate understanding

Many students welcome the way in which teachers are willing to show them alternative methods to the ones they have been taught but not fully understood in school. Although there are some dangers of confusion when demonstrating alternative methods, this approach is generally a valuable aid to understanding concepts that have not been grasped before.

Providing a variety of approaches to address students' poor knowledge of mathematics

General FEC, rural, between 1,000 and 2,000 GCSE

Upon enrolment, the college uses a range of diagnostic measures (specific testing packages, data were available from feeder schools, qualitative assessments, etc.) to gauge the capabilities of individual students. The mathematics team's experience has led them to conclude that many students lack some of the theoretical, basic foundation skills in maths. Teachers use a variety of approaches and strategies to help students choose the best method for them. In the example of multiplication, teachers show students traditional long multiplication, box / tabular methods or other options such as oriental line methods.

$\begin{array}{r} 157 \times \\ 43 \\ \hline 471 \\ 6,280 \\ \hline 6,751 \end{array}$	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="background-color: #003366; color: white;">157 x 43</td> <td>100</td> <td>50</td> <td>7</td> <td></td> </tr> <tr> <td>40</td> <td>4,000</td> <td>2,000</td> <td>280</td> <td></td> </tr> <tr> <td>3</td> <td>300</td> <td>150</td> <td>21</td> <td></td> </tr> <tr> <td>Total</td> <td>4,300</td> <td>2,150</td> <td>301</td> <td>6,751</td> </tr> </table>	157 x 43	100	50	7		40	4,000	2,000	280		3	300	150	21		Total	4,300	2,150	301	6,751
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Total	4,300	2,150	301	6,751																	

Central to the teaching method is the dialogue between the teacher and the student. Teachers show how methods are used, then sit with students (often in pairs or threes) and ask them to explain the underpinning concepts back to them. This dialogic approach enables the teacher to qualitatively assess individuals' understanding and progress. Teachers suggested that the strategy of concentrating on building up the foundation skills students were missing enables the learners to gain a relatively large number of marks in an exam.

For example, in one lesson students learned to use the ‘Singapore bar’ method to solve problems on ratio and in another lesson individuals used different multiplication methods to suit their personal preferences.

It was a Chinese style teaching of ‘say’ and ‘do’ in school. The teacher didn’t try to find out if we understood or not. The teacher in college shows us different ways of doing things and goes over things until we understand it.

General FEC, semi-urban, fewer than 1,000 GCSE
Mathematics learner

Lesson observations suggest that it is fairly common practice for teachers to offer alternative methods, rather than offering a single method to the whole class, and to persist until students do understand. This pedagogical approach and level of support from teachers is clearly an approach that brings success with student learning but places demands on teachers to be resourceful, patient and knowledgeable about alternative methods.

Stretching the more able learners in lesson

The main concern of many providers is for students to gain a GCSE Grade C or achieve a pass if they are taking a Functional Skills examination. A few providers however do look beyond these minimum requirements and encourage students to aim beyond a Grade C. Similarly, in a Functional Skills class, even if the majority of students are aiming for a Level 1 examination, there may be some who are capable of a higher level.

In these situations, some teachers increase the range of differentiated tasks available for students so that more able students are stretched. Some teachers also adopt strategies such as inviting students who understand a topic to explain to those who are struggling, or engaging in a paired activity so that this happens during completion of the task. Being able to explain a concept or process to others enables the student to self-assess their own understanding, refine ideas, deepen their personal understanding and build confidence.

For example, in one mathematics class students worked individually on constructing a geometrical shape from paper for a while before the students were grouped around a table to watch one student demonstrate how they fulfilled the task. The student was asked to explain what they were doing and why as they worked through the steps, whilst the teacher asked him questions to clarify his reasoning.

Using active (participatory) learning to address student needs within a multi-level class

General FEC, urban, 1,000 to 2,000 GCSE students

This college is situated in an urban area and the curriculum areas are spread across several sites. Although the college management aim for a streamlined approach with groups of students from the same vocational area and level working together, the unequal numbers requiring English and mathematics classes from different vocational areas and college sites makes timetabling difficult and compromises have to be made for financial viability. English and mathematics teachers therefore often teach classes of mixed abilities and need to use differentiation to ensure students at different levels are learning. This is achieved by firstly using diagnostic assessment to identify individual weaknesses and then trying to address these through differentiated activities. Student motivation is also a problem that the college is trying to improve and teachers recognise the need to engage students with stimulating activities that encourage active participation in learning. In one mathematics lesson both differentiation and participatory aims were achieved through the use of a set of card-based tasks that addressed different areas of student difficulty. Students worked in pairs on tasks that were selected to target their identified weaknesses and allowed them to work at an appropriate level. By working together in pairs students quickly became engaged in their tasks and discussed their ideas. The exchange of personal interpretations and understandings between students led to some of their misconceptions being addressed without intervention from the teacher. The tactile nature of the tasks, with cards that could be selected and moved around, helped the students experiment, engage in discussion and construct their own learning pathways. Whilst encouraging more student independence and responsibility in the classroom, the design of the activity also enabled the teacher to focus on students with the greatest need for support.

Classroom culture and relationships

Providers make frequent reference to the need to develop an alternative, different learning experience for students than that they experienced. Many believe that learning English and mathematics in post-16 education should be presented as a new opportunity and not simply replicate their prior experience, which has often led to 'failure' and disaffection.

Although the quality of the subject teaching remains important, students value a classroom in which they are treated as adults, supported and feel included. To create this type of a classroom culture teachers find they need to work on developing strong,

positive relationships between themselves and individuals and also between the students themselves.

The relationship between teacher and student

The relationship between a teacher and their students is a key factor in whether the students engage with learning and benefit from their English and mathematics lessons. Some teachers view the development of positive relationships with their students as an essential element of an effective classroom and prioritise this at the beginning of the year. One example demonstrated the importance some teachers place on extending this interest in students' progression and lives outside of their own classes.

I think you have to really build relationships. I think that's the most motivating thing that you can do ... If you're interested in them as a person, no matter if I've covered the lesson once, I will talk to them around college, and I will say, 'Hello.' The difference it makes ... my groups are still my groups, and people that are still here, and I've asked them, 'How are you getting on?' I think bolstering their confidence in as much as they are being seen as important. It is important that they pass, but they are important as people...

General FEC, urban, more than 2,000 GCSE
Teacher

Students also appreciate the adult to adult relationships that are common practice in most general FE colleges. This encourages students to ask questions and discuss their ideas with their teacher, bringing their misconceptions and weaknesses into an arena where they can be addressed. The development of this type of student-teacher relationship also help build a collaborative and supportive culture for the student group. This provides a safe social space where students can be open about their difficulties and be confident of receiving support from both their teacher and peers.

Peer-learning

Teachers use peer assessment and peer-to-peer learning strategies but the extent to which these approaches are used and their effectiveness is variable. Peer assessment is sometimes used as a quick marking method in which students gain familiarisation with marking schemes. There are however, greater benefits when peer assessment leads to discussion in which students learn to critically appraise a piece of work, receive detailed feedback from their peers, discuss the issues and self-reflect on their own work. This encourages students to review their own work and take a critical approach, thereby developing wider study skills.

Peer learning takes place informally in many classes because students are generally allowed to discuss their work with each other. Opportunities are limited however if individual learning without any discussion is adopted as the norm for a class. Teachers make more extensive and effective use of peer learning when this is deliberately planned

into classroom activities in the form of collaborative work in carefully constructed groups or pairs.

Using peers as assessors in a collaborative and formative approach

General FEC, semi-urban, fewer than 1,000 GCSE students

When examination results for English and mathematics in a college have not been good, this has often been due to multiple factors rather than a single cause. In this college, several problems have contributed to low pass rates, including serious difficulties in recruiting English and mathematics teachers. This has had a significant impact on the quality of the student experience and although the head of department believes that inspirational, active learning is needed to engage students, this is difficult to achieve with inexperienced teachers.

The college has used a range of strategies to find good teachers which has included upskilling vocational teachers. In one class, a vocational teacher teaches a GCSE mathematics lesson in a way that overcomes some of the wider challenges and demonstrates the potential that teachers have to change student learning experiences. The lesson begins with a starter activity through which students' fundamental skills with number are reinforced. The teacher records their results in order to monitor progress over time and to highlight weaknesses that need further attention. The students are also expected and take some responsibility and return to questions where they have made errors as part of their home study.

This shared responsibility, between teacher and student, encourages students to become active partners in a collaborative and formative approach to improving their attainment. Later in the lesson the students work in groups on a range of questions and are encouraged to discuss their work. One student in each group is appointed as an official assessor. Their role is to mark and give feedback to their peers once a question is completed. This leads to peer-to-peer discussion about the solutions, during which students often clarify their own understanding of the concepts and processes involved rather than relying on the teacher's explanations. Having worked in a vocational area of the college, the teacher is familiar with students' expectations of college and reflects these in his approach to teaching mathematics. The lesson demonstrates how roles are shifted from a teacher-child situation to a collaborative approach with shared responsibilities, which encourages student participation and a more adult attitude towards learning.

Mixed ability and areas of study

Within a large organisation that is structured into separate (often vocational) departments means that the timetabling of English and mathematics classes by ability, or by students' main area of study, is challenging. Resit GCSE classes would normally include students with a Grade D but some with Grade E or Level 2 Functional Skills or even Level 1 Functional Skills may be present in the same class. As noted earlier, the subject knowledge and skills of students in a single group may differ quite widely. Most providers attempt to timetable Functional Skills so that the range of abilities in one class spans only two levels but this is not always possible without creating very small classes that are viewed as 'unviable' financially, or by creating very large classes.

Most teaching therefore could be considered as mixed ability but across a range that is theoretically limited but still demands some differentiation in practice. The preference of most providers is also to teach students from the same main area of study in their own classes rather than mixing students from different vocational areas. Again, this is not always possible. Teachers often comment on the differences in dispositions towards learning and preferred learning approaches of students from different vocational areas. For this reason, it is often deemed more effective to deliver English and mathematics lessons to students grouped by their elective subject of study:

We've done more mixing this year because of the need to be more efficient but the English and maths staff don't particularly like the mixing, they don't think it works well... For example, if you have some sports students in with hair and beauty students it doesn't work that well. The dynamic isn't quite right.

General FEC, urban, fewer than 1,000 GCSE students
Senior leader

Another teacher comments on how learning approaches that work for hairdressing students are less effective with plumbers or joinery students because they have different ways of working and preferences. Timetabling arrangements and constraints have a significant impact on the constitution of student groups and therefore indirectly affect the pedagogy that a teacher will choose to use.

The use of homework and its wider purpose

Providers are generally keen to encourage student work outside the classroom. The rationale for homework appears to be based on one or more of the following: as a means of augmenting the timetabled sessions; to increase opportunities for independent study; and/or, help nurture learners; personal responsibility for studying English and/or mathematics. However, the completion of homework is not always easy to encourage. Students who are resistant to learning English and mathematics and attending timetabled sessions are unlikely to undertake further work in their own time.

There may not be policies in place but most providers are attempting to establish homework as an expected element of English and mathematics provision. Students are encouraged to supplement classroom-based learning with self-study in various forms. For example, some providers supply resources on their own Moodle platforms, or direct students to web-based open access materials or use commercial packages of self-study materials. Where such approaches are used teachers employ different methods to track student progress so that they are aware of those who are not using the materials and can encourage participation.

There isn't a policy regarding homework other than that they're expected to have their in-class learning supported by both attending our English and maths hubs, and access to Moodle and their homework books, etc.

General FEC, urban, over 2,000 GCSE
Senior leader

Teachers may also set homework in the form of written work in various forms; the point is to be flexible to the needs of the student.

Homework can range from anything from a one-sided typed quiz or activity, to something-, we deliver Functional Skills five-one model, so they will learn skills and knowledge for four to five weeks, and then in weeks five to six they will do a project to consolidate those skills.

General FEC, urban, fewer than 1,000 GCSE students
Senior leader

Providers tend not to use sanctions against those who do not complete work outside the classroom, but encourage students to develop an adult approach to taking ownership of their own learning. This fits with the general dialogic and collaborative approach adopted by the providers taking part in this study.

Developing examination techniques and using marking schemes

Students not reaching the standard GCSE grade in English or mathematics have often experienced difficulties coping with examination questions. Teachers explain how students often have problems identifying how to answer a question even though they have the required knowledge. This may be due to the difficulty of interpreting the question or applying what they know or simply expressing their answer appropriately in writing. It is not uncommon for students to be able to give appropriate verbal explanations but struggle to communicate the same ideas fluently in written form. In English, students often have difficulty reading source texts and writing substantive answers simply because they rarely read or write anything of this length in their daily lives.

It's quite apparent that the vast majority of them do not read any books or, if you like, extended writing outside of college. They don't read novels, they don't read fiction, they don't read newspapers, they don't read magazines. Most of their reading and writing will be text, social media based, bits and pieces and things they might have to do for their vocational course. So we decided we have to go back to primary level. We're now buying in a whole load of books. We're going to start putting in book corners and book clubs and giving them, sort of, you know, reading challenges and things like that to get them reading.

General FEC, urban, good pass rates in mathematics, fewer than 1,000 GCSE
Senior leader

Another provider has introduced a reading scheme to help address students' reading problems. The scheme aligned to concepts associated with the GCSE and included related materials (passages from specific texts and related exercises) to illustrate the learning outcomes from lessons. Students also have difficulty with 'wordy' mathematics questions and teachers have to be show them how to break these down to understand what is required.

Since passing a formal written examination is, for many students, the only measure of performance within the current system, teachers spend large sections of time on developing examination techniques.

Breaking down English exam questions and using contemporary materials to engage students and help them learn the necessary techniques

General FEC, urban, fewer than 1,000 GCSE students

Teachers in this college report that having failed their English exam, students can feel unconfident and demotivated when considering retakes. To encourage students to address their barriers to exams, the English teachers have created a large number of practice exam questions and break these down into their constituent parts. For instance, for a question seeking interpretation, teachers advise students to provide two statements, identify supporting quotes for each and then suggest what the reader could infer. This helps students understand the elements they need to include in their responses to attain as many of the marks available as possible and it makes the question less intimidating. To these exercises as engaging as possible, teachers have devised topics from contemporary culture that they believe are of interest to students. One example is a newspaper article about the musician Tinie Tempah, used as the source text for an understanding and interpreting meaning exam question.

Students are also taught to calculate the time they should spend answering a question in exam conditions based on the number of marks available for the question. The students then have this time available in class to try to answer this question individually. Once this time is up students are asked to share their answers with the class and there is a group discussion guided by the teacher on the variety of possible responses to a question and which are the most appropriate for the context. The students interviewed suggested that due to this approach they are more likely to try to answer lots of questions in the exam rather than spending all of their time on a question which they are finding difficult to answer. Teachers and learners interviewed both reported that the group discussion about how one could answer lots of different exam questions enables students learn more possible responses to questions than they would have identified on their own and become more confident about their ability to re-sit their exams.

Teaching examination skills

Teachers realise that passing an examination may require students to learn examination skills in addition to improving their actual English and mathematics but that this takes time away from developing subject knowledge and skills. Examination skills are often taught throughout the year by using sample examination questions during lessons and discussing mark schemes. In one mathematics lesson, a student was asked to work through their solution to a problem in which they were asked to calculate values for a linear equation and construct a straight line graph. The class were then asked to apply the mark scheme and decide what mark the student would get. The teacher questioned

the class about several elements of the solution to clarify how the mark scheme would be applied and what the students needed to add to achieve the maximum mark.

Through the use of sample questions and mark schemes, students are often taught how to maximise their marks. Teachers show students carefully how mark schemes in mathematics reward interim work and not just the answers, encouraging them to show all their working clearly so that they might gain these interim marks. In English students are taught which elements to include and approaches to use that will attract marks. Teachers use frameworks and guides to help students remember these techniques. In some lessons this is done using collaborative approaches and peer-learning but often examination techniques are presented using an instructional approach as a set of rules to be applied. Another example of examination technique was instruction about which questions to answer first (i.e. out of sequential paper order) to ensure students write first about topics for which they are more confident and/or knowledgeable.

Some providers timetable additional revision sessions near to the examinations because students have difficulty knowing how to revise and working together on revision is more successful. Revision skills are also taught in normal classes. For example, in a mathematics class students prepared their own 'mind maps' in small groups about a given topic to show the facts they needed to recall. They used their own notes and the Internet to verify the facts but created their own posters and then presented these to each other.

Lesson structure and maintaining interest of students

Teachers often structure English and mathematics lessons to include an introduction, some recap on previous learning, a series of learning tasks and a final summary. The introduction usually includes the aim of the lesson and may include a starter activity for recap or reinforcement of prior learning.

Lesson structures vary depending on whether the subject is taught in one session (2 - 3hrs) or split into two shorter sessions (e.g. 2 x 1hr; 2 x 1.5hrs). Three hour lessons in particular are challenging since student concentration deteriorates. Some teachers believe that one hour lessons would be preferable whilst others feel the 'settling down' period needed with some groups means longer sessions are more productive. All teachers agree that students need variety in the teaching approaches used and changes of learning activity at fairly frequent intervals to maintain concentration. Mixing periods of individual work, group activity and class discussion with variety in the use of paper-based or computer-based tasks can create lessons with a coherent theme but sufficient changes of focus to keep students engaged.

Employing short competitive games to engage students in lessons and ensure they learn exam-relevant knowledge

General FEC, urban, 1,000 to 2,000 GCSE students

English and mathematics teachers in this college recognise that the students have motivational barriers to engaging enthusiastically in learning. Through the sharing of effective practice and seeking online resource tools, teachers have identified a number of activities, often competitive in their nature, to make topics within the subjects more enjoyable to learn. For example:

In an English lesson, learners interviewed described how a teacher introduces a round of hangman if students are struggling to recall the name of a linguistic term being taught. Students take it in turns to suggest letters in the word before someone is able to guess it.

In a mathematics lesson observed during the site visit the teacher encouraged students at the end of a particular lessons to log onto and complete a quick related topic quiz on Mr Barton's maths website (www.mrbartonmaths.com). The resource shows the number (not names) of students who answer questions correctly. This feedback shows students how their recall compares to the performance of their peers, and it provides the teacher with the opportunity to identify which elements of the topic have been understood well and which parts need further instruction.

Both students and staff at this college were very positive when interviewed about this approach to lessons. Learners interviewed suggest they find their lessons fun and that they remember more than they did at school. They indicate that such activities provide a memorable event which helps the students to recall the information and key concepts. Learners from one English class explained that they had been shocked by the improvement achieved in their recent assessments and believed it resulted from the more engaging teaching methods employed. Teachers when interviewed said that by employing competitive activities they are able to attract the attention of learners and engage them in learning about, and embedding, the more difficult concepts of English and mathematics.

5. Leadership and management practices that influence teaching and learning

Providers started to address DfE changes to English and mathematics policy at different times, and the extent to which the policy was prioritised differed by provider. The reasons for differences are considered first in this section. The key leadership and management decisions made at the strategic level are categorised as structural decisions and resource considerations. The leadership and management practices which influence the teaching and of English and mathematics to 16–18 year olds are examined in the second part of this section.

The provider's vision towards English and mathematics

A provider's response towards English and mathematics policy influenced their preparedness to deliver the subjects to 16-18 year olds and their teaching and learning practice. As noted in Table 2:1 (p.22), there is significant variation in the prior pass rates of the profile of students entering FE colleges compared to other provision for 16 to 18 year olds. There is also variation in the pass rates between FE colleges. The following sections cover some of the leadership and management decisions that representatives from providers think impacts on teaching and learning.

Number of years taken to develop a strategic response

Providers started to deliver GCSE English and mathematics teaching to target 16 to 18 year olds in different years, with some commencing before the introduction of DfE's current policy in 2013. The key differences and reasons for these developments are:

- Several providers had considered it important for students to achieve at least a Grade C at GCSE for many years and encouraged target students to continue their studies and retake their exam. They have therefore had more time to develop teaching and learning practice and put in place effective measures for target students. Examples of this approach were in the minority and most often seen within, but not limited to, sixth form colleges. The driver for this decision appears to have been the teaching of A-Levels and the expectation that learners will be considering future entry to university where such grades would be a prerequisite.

... Probably 95% of our students are on a Level 3 course. if you didn't have your English and maths GCSE [at this college], you were automatically put on a resit English or maths GCSE. In the last twenty years or so, we've found an alternative qualification for those students coming to us who'd failed maths or English profoundly.

Sixth Form College, urban, fewer than 1,000 GCSE

- Many providers started to make changes to the delivery of English and mathematics immediately after the government's 2013 English and mathematics policy announcement. These providers felt it important to address the policy changes as soon as possible in order to have the best likelihood of providing good quality English and mathematics teaching and learning.
- A group of FE colleges only began to make changes to their strategic approach to the delivery in English and mathematics in 2014/15 when it became a condition of funding for 16-18 year old students to continue their studies in these subjects. These colleges have predominantly been focused on vocational subjects in the past, so without a history of delivering English and mathematics, and some have had internal issues to address.

Impact of level of preparedness and subsequent teaching and learning

The four FE Colleges for whom managed planning for English and mathematics took place before the 2013/14 academic year all had relatively good pass rates for Mathematics (the top quartile for the sampled colleges) and all but one had good achievement for English.

Regardless of the timing, an identifiable difference in attitude for all colleges is the prioritisation this policy received from senior management. The focus on the delivery of English and mathematics is evidenced in the following types of leadership and management decisions:

- Engaging all staff throughout the college regardless of their subject specialism in the importance of English and mathematics teaching and learning to and students.
- Financing a full complement of English and mathematics teachers and managers who are trained and/or have the teaching experience to the desired level; and
- Planning the structure of English and mathematics teaching to best meet the needs of the college.

Maths and English... [has] high focus... we proactively check attendance and retention, etc., and we quickly identify where there are concerns ... we have a very rigorous performance review model, where departments meet with the senior leaders quarterly and every quality indicator of the department is discussed in that meeting ... in terms of governors, it's their number one strategic priority, to further improve maths and English performance; it's got the profile and the buy in across the organisation and that's very important.

General FEC, urban, 1,000 to 2,000 GCSE students

Implementing organisational changes to deliver high quality teaching and learning to an increased volume of English and mathematics learners

General FEC, urban, over 2,000 GCSE students

This college has introduced a number organisational changes in the last few years to support the changes in English and mathematics policy for 16–18 year olds in order to ensure strong delivery. The measures introduced include:

- Creation of a management role specifically to coordinate the staffing and administrative/ attendance tracking demands created by a 200% increase in the number of students continuing to study the subjects.
- Prioritisation in timetabling processes - English and mathematics are timetabled first, often as morning sessions or in the middle of the day before the specialist subjects they sit within. This positions them at the heart of the teaching week and avoids marginalisation into 'graveyard slots'.
- Establishment of English and mathematics "hubs" at all sites. These are physical spaces for English and mathematics staff and are used between each lesson like a staffroom. These spaces have created an opportunity for collegiality and knowledge sharing amongst English and mathematics teams whilst also facilitating their integration with other subject teachers as 'hubs' are often located centrally to enhance interaction with other staff.
- Adoption of a 'growing our own' approach to staffing English and mathematics lessons. This involves supporting vocational teachers to take courses at Level 3 and above to develop their ability to teach higher levels. This is a long term strategy that values teaching staff and builds their capacity.

The views of English and mathematics from curriculum areas

The evidence indicates colleges with stronger GCSE English and mathematics pass rates were able to encourage staff from other curriculum areas to recognise their value and importance. Conversely the staff of several colleges which are performing less well in terms of pass rates identified as a the lack of engagement in, and ownership of, the policy by their colleagues in other curriculum areas as a barrier to the effective delivery of English and mathematics teaching in their institution.

I've got some students that are from plumbing, and they were actually told by their lecturer, 'Oh, to be a plumber, you don't need your C Grade. You can get away with

not having it.' So, he doesn't even attend. He told me himself, 'I've been told this. I don't need my C Grade. I'm not going to come to maths.' So, I never see him.

General FEC, urban, between 1,000 and 2,000 GCSE Teachers

Branding English and mathematics to raise the subjects' visibility and value

General FEC, urban, over 2,000 GCSE students

At this college English and mathematics have a high profile and senior leaders have demonstrated the value they place on the subjects by investing in a brand for them. The multiple strands of embedded teaching and learning in English and mathematics across the college are unified under a brand name and logo: 'GEM', short for 'Great [at] English and mathematics'. The GEM logo is applied to classroom learning materials and is used to signify areas of the college that are dedicated to English and mathematics support. For example:

- Sections of the Learning Resource Centre are furnished with desks, computers and space to work are signposted with the colourful logo.
- Smaller classrooms are used for more intensive teacher-led support sessions are identified with the branding.
- Embedded English and mathematics learning in elective courses and for extra-curricular support is also symbolised with the logo.

In addition, GEM mentors provide peer-support, there is a GEM week in which the profile of English and mathematics is raised college-wide, and GEM revision sessions are offered just before exam time. Anecdotal evidence reported in interviews with college staff suggests the branding helps raise awareness of English and mathematics throughout the college, raises the profile of both subjects in relation to elective courses and ties together the wide variety of teaching approaches and support that are available to students who are re-sitting these exams.

The ways in which providers effectively communicate the importance of English and mathematics college-wide are outlined later in this section.

College financial position and the impact on resources / staffing

The financial position of a college, and/or the prioritisation of funding on English and mathematics teaching, can influence providers' success in recruiting and/or retaining high quality English and mathematics teachers. A number of the colleges we interviewed were in a position to offer financial incentives to recruit staff, for instance using golden hellos, and/or to retain teachers with competitive salaries and/or career progression options. The extent to which salaries and incentives could be used was dependent on a number of factors aside from a college's financial position. These include the contextual factors

discussed in Sections 3 and 6 such as the local labour market, level of sector competition in an area and, as detailed below, the length of time a college has been developing their English and mathematics organisational level strategy. The salary differential can also be used to incentive teachers and lecturers from other subjects to transfer to English and mathematics.

... we offer golden handshakes, we offer introductory additional payments and all sorts of incentives... but of course we are in a reasonable financial position.'

General FEC, urban, fewer than 1,000 GCSE
Senior leader

The influence of financial resourcing of English and mathematics staff was also evident in the importance given by strongly performing providers to senior management staff responsible for delivery of teaching and learning in these subjects. Colleges which were performing well tended to have more levels of management staff with responsibility for English and mathematics delivery. Such members of staff include heads of English and mathematics in addition to subject leads in both areas.

Providers which were behind the curve in terms of performance had only recently started to recruit such members of staff into position. These members of staff recognised that they were having to respond to the policy changes reactively and were yet to see an impact on GCSE pass rates of the interventions they had recently implemented.

I've been here five weeks, and I've now taken on an Associate Director's post, sort of, governing English and maths delivery, but also the impact of the study programme. One thing I've had a meeting with the Managing Director about, is that fundamentally, we don't embed it within the study programme, and get buy-in from the team, that's where we're failing on English and maths... They're a work in progress, and I think the fact that I've been hunted speaks volumes, really, about where they want to go, but also where they currently are.

General FEC, semi-urban, between 1,000 and 2,000 GCSE
Senior leader

Departmental structures and decision-making

Senior leaders of several colleges in the sample said they had spent a considerable amount of time considering and developing the structure in which English and mathematics teaching within their institution. There are two principal ways in which the teaching was structured:

- A centralised department where students from different curriculum areas come from elsewhere in the college to receive English and mathematics teaching

Having the standalone faculty means that we have got an overview over English and maths... there is a central point where we know exactly what's happening with English and maths throughout the college. That way, we can also have our specialists in there as well, rather than having a member of staff within the vocational areas. It just makes it more streamlined. It makes it more organised. It makes it easier to handle, I think, and for tracking, for monitoring those students. There's that standardisation... If we're all part of the same faculty, we all have the same staff development. We can target our strengths and areas that we need to improve, and that does-, we don't get subsumed into the rest of the college. It's given the importance that it needs to have.

General FEC, semi-urban, fewer than 1,000 GCSE
Senior manager of English and mathematics

- And a dispersed system whereby specialist English and mathematics teachers are based in curriculum areas.

... They've decentralised the English and maths staff. So they're now working in the vocational areas, and actually sat located within those vocational areas and working with course teams, which has improved communication and tie-up.

General FEC, semi-urban, between 1,000 and 2,000 GCSE
Senior leader

Ownership of English & mathematics by teaching departments

General FEC, urban, over 2,000 GCSE students

The college had first delivered the English and mathematics GCSE separately to students' main subjects of study, using a centralised system, but changed their approach in 2015/16 following only one year of operation. The change was motivated by recognition that student attendance in these lessons was poor and that vocational subject staff were having difficulty dealing with this and/or were not taking responsibility for addressing this issue. The new structure has GCSE English and mathematics teachers located within each other curriculum's department. Following the change, teachers and managers reported that vocational teachers had found it easier to track attendance and follow up non-attendees. As a result of the new structure, interviewees suggested that college operations were more efficient, student satisfaction had increased, and attendance had improved.

There is also a mix of the two whereby GCSE specialist teachers tend to be centralised and Functional Skills teachers are dispersed. The purpose, application, and impact of the two main approaches are outlined in Table 5:1.

Supporting communications between English and mathematics teachers in a dispersed structure

General FEC, urban, over 2,000 GCSE students

This college has a dispersed structure where English and mathematics teachers are assigned to particular vocational areas to teach these students their GCSE and Functional Skills level lessons. The subject specialists over time have developed strong relationships with their colleagues in the other curricula areas. This means that they support each other to teach their most challenging students, share ideas about the best ways to engage particular students in English and mathematics by drawing on their interest in their vocational subjects, and discuss the most effective means to embed English and mathematics into the vocational lessons. To prevent English and mathematics teachers feeling isolated being located within other departments these teachers have regular meetings together. The subject specialist meeting enable the teachers to discuss what is working well and less well in their delivery, share best practice, and train together on particular areas of interest e.g. new marking schemes.

Structure	
Centralised	Dispersed
Purpose	
A core departmental team operating its own classrooms and resources within a section of the college given over to English and mathematics. Offers a singular direction for both subjects that is easily managed.	A central management team with specialists sitting in other curriculum areas. Increases the linkages between English and mathematics and the curriculum areas.
Application	
<ul style="list-style-type: none"> - Sixth form colleges which have long established English and mathematics departments. - FE colleges which believe it is important to have English and mathematics classrooms designed in particular ways and with specific resources. - Colleges where English and mathematics timetabling has priority over other subjects and lesson times are arranged to maximise high attendance levels despite students moving from one room to another across the college site. 	<ul style="list-style-type: none"> - Large colleges with a full complement of English and mathematics teachers which can maintain staffing levels and class sizes for each curriculum area. - Multi-site colleges serving different curricula/ geographic areas. - Colleges where lesson attendance levels could be detrimentally affected if students rather than teachers are responsible for changing classrooms or buildings at the end of each lesson.
Impact	
<ul style="list-style-type: none"> - Confident English and mathematics teachers who are able to meet regularly with each other to share good practice regarding teaching and learning and receive moral support from their peers. - Learning environments focused on English and mathematics, with subject specific materials displayed on walls providing a more engaging experience for learners. 	<ul style="list-style-type: none"> - Specialist English and mathematics teachers use their knowledge of the curriculum area in which they are based to make lessons more relevant by identifying links between English / mathematics and the elective subject. - English and mathematics teachers meet regularly with other curriculum teachers, for instance in staff rooms between lessons. This allows the specialists to: <ul style="list-style-type: none"> o Share experiences about the most effective ways to engage particular students or students studying a specific subject; o Discuss ways in which non-specialists can embed English and mathematics in their own lessons; o Understand the value of each other's subjects and communicate this to students.

Table 5:1: Summary of different English and mathematics delivery structures

A mix of these two approaches to structuring English and mathematics provision was used in several colleges. In these cases GCSE specialist teachers tended to be centralised and Functional Skills teachers dispersed. The motivation for this decision is the difficulty in making connections between the GCSE and the subject areas; Functional Skills was said to be much easier to connect precisely because it is an applied qualification.

Then with GCSE... it's more academic content there's perhaps less opportunity to embed it within vocational subjects, so we've continued to do that with Functional Skills, which is one of the reasons we kept it in the departments, but we've probably moved away from that approach with GCSE, especially the new specifications. I think it doesn't lend itself to embedding in quite the same way.

General FEC, urban, 1,000 to 2,000 GCSE students
Senior leader

Neither approach *in itself* guarantees strong pass rates. Of greater importance is the level of priority assigned to GCSE by senior management and the extent to which curriculum teachers believe the GCSEs are important to their students.

You have to make sure that SMT are completely on board with everything. SMT, in all of their talks, whenever they've got any talks to the staff, they always mention English and maths and the importance of it. The heads of faculty emphasise the importance of English and maths, and as part of the scheme of work as well.

General FEC, semi-urban, fewer than 1,000 GCSE
Senior manager of English and mathematics

Embedding English and mathematics into other curricula

Several providers have taken a range of measures to increase the amount of English and mathematics teaching taking place in the delivery of other subjects. The approaches include the following which have been ordered by level of engagement sought from other curriculum areas in the delivery of English and mathematics:

- Communications circulated throughout college to promote English and mathematics activities;
- Teachers of all subjects throughout the institution responsible for identifying and marking elements of numeracy and literacy in their students' work;

Teachers are asked to identify in their schemes of work, where the opportunities arise to push literacy and numeracy and oracy, and to push to develop them. In terms of marking, it's not just marking on the subject content. We give marking feedback on literacy and numeracy skills.

Sixth Form College, urban, fewer than 1,000 GCSE
Senior leader

- CPD days for all teaching staff promoting ways to teach English and mathematics within their lessons; and

... Those development days have workshops, and support on how to support the development of maths and English within the curriculum. All staff have to have at least a Level 2 maths and English already themselves. Within vocational areas in the past, that's not always been the case, because they've come with vocational experience, and not necessarily the correct knowledge. So, there's a real focus on maths and English enhancement programmes, as well. Vocational staff, as well as the core GCSE staff could attend that training. It's ongoing again at the next development day we've got. So, there's been lots of work done in preparation for embedding, supporting maths and English.

General FEC, urban, 1,000 to 2,000 GCSE students
Senior manager of vocational curriculum

- Creation of online numeracy and literacy activities which teachers of other subjects are encouraged to integrate into the start of the classes.

When every member of staff logs on in the morning, there's a popup screen with links to Mathematics and English resources. We have the theme of the week, because you can't expect vocational staff to have an all-round in-depth knowledge of English and Mathematics, so rather than compromise them, we've provided the resources so they can embed that as a starter activity or a plenary, or whatever, in their session.

General FEC, semi-urban, between 1,000 and 2,000 GCSE
Leads of English and mathematics

Colleges trying to embed the teaching of English and mathematics within other curriculum areas, most often employ learning walks to observe and highlight areas of strength or weakness. In addition some colleges provide additional refreshers to teachers of other subjects who feel they need it to help them more confidently support English and mathematics needs of their students.

... We do SPAG¹³ sessions for students and for staff, because vocational staff sometimes feel a little bit compromised if their own spelling, punctuation needs are, they come from industry or a trade and they might not necessarily have the skills themselves. We did it across college as a voluntary basis...

General FEC, semi-urban, between 1,000 and 2,000 GCSE
Leads of English and mathematics

¹³ Spelling, Punctuation and Grammar

The employment of such efforts by providers demonstrate the prioritisation provided to English and mathematics in these institutions. It is anticipated that the college-wide coordinated efforts to increase the English and mathematics skills and knowledge of students will result in stronger pass rate performance.

Choices about GCSEs and Functional Skills

It is clear from our research findings that strategic decisions have been made in colleges regarding which students should study GCSE¹⁴ or Functional Skills level and why. These are taken in turn in the following sub-section.

GCSE qualifications

In line with the government's policy, all students with a Grade D in English and/or mathematics in the colleges in our sample are enrolled on GCSE courses. A number of colleges however are also enrolling students with a Grade E, with a minority enrolling all students regardless of the grades they have. The strategic decision to enrol Grade E or lower students is primarily to assist students to focus on attaining their GCSE as the qualification and associated topics are familiar to the student. Teachers in such colleges emphasise that it is not expected that an Grade E student will achieve a Grade C in their first retake but that they will be helped to make progress towards over time.

... Previously, would-be learners with a previous grade of D that took a resit, now... learners with a D and an E are doing a resit... We think that it's better for them in terms of their progression routes and where they want to go, and many of them study with us for two years. So, a learner with an E, they might not get to a C in the first year, but they might get to a D, and then in the second year, hopefully they'll get to a C, and we kind of thought that was longer term and more value to them than [the Functional Skill route].

General FEC, urban, 1,000 to 2,000 GCSE students
Senior leader

Other colleges also cite issues with Functional Skills for decisions to enrol students outside of the policy directive onto GCSE; these issues are explained in more detail in the relevant section later (p.83).

A number of English and mathematics managers and teachers cited examples where their college had purposefully decided to enrol more capable students for the higher GCSE papers rather than the foundation. Such a decision is dependent on a diagnostic

¹⁴ As of September 2014 it was a condition of funding that students who have not yet attained a Grade C in English and/or mathematics should continue to study these subjects, and as of September 2015 those with a D should retake their GCSE.

assessment of the ability of the student, the circumstances that led to them not achieving a C in the first place and/or the length of time available for students before entering an exam. The strategic drivers of these decisions were either a college ethos of raising student aspirations or focusing this opportunity on students in curriculum areas where a higher GCSE grade will benefit their progress, for example mathematics for engineering students.

I wish we could take away C as being the goal for learners. I would take that out of every piece of literature that you have, because, you know what, they can go further than that. We deliver our English, we teach to A. I just think that if you set that goalpost at C, then you're always going to get this big chunk of learners who will just push to that C boundary, and will fall beneath it. If you push that bar higher, and give them some aspirational teaching, the students will get on board with you, and hit it. We had one class last year ... Out of that group of sixteen, I had two As, and six Bs. I think we had two Ds. The rest were Cs ... I really felt that if you start telling a student, 'Actually, yes, you can get a B or above,' their sense of belief will improve. This is as much an emotional battle for them as it is an intellectual battle as such.

General FEC, rural, between 1,000 and 2,000 GCSE
Senior leader

Teachers and subject managers were more likely than senior leaders in our sample of providers to question the appropriateness of GCSE qualifications for all 16-18 year olds who have yet to achieve at least a Grade C. The principal reason for this is the lack of relevancy they perceive the course content having for students following particular career paths.

... in terms of maths I don't think a GCSE is the right qualification for everybody because the GCSE syllabus, you know-, a hairdresser wouldn't need skills in this, this, and this, and then you try to teach them some trigonometry and it's not relevant...

General FEC, urban, More than 2,000 GCSE students
Teacher

These members of staff, whilst valuing English and maths and viewing them as necessary skills for the workplace, believed that more applicable qualifications should be made available to students not seeking a traditional academic route in their careers.

What we need is an applied English GCSE, or an applied English and maths GCSE, something which is related to employability, work, being a citizen and being able to deploy... communication skills and maths skills in the real world. Not something which appears to me to be a preparation for academic study of English literature

and very high-level maths at university, which may be appropriate for those that are going down that route, but certainly not appropriate for everybody.

General FEC, urban, fewer than 1,000 GCSE
Senior leader

Functional Skills

The majority of providers in our sample enrolled students with a GCSE Grade E or lower in English and/or mathematics onto Functional Skills. Several reasons for using Functional Skills were provided by senior managers and teachers, some of which are contradictory:

- Some felt it more beneficial for students' confidence to encourage those with a lower GCSE grade to build up their basic knowledge of English and mathematics on an alternative course rather than expect students to continue studying for a qualification they have already failed. In this way Functional Skills is perceived to be a helpful stepping stone to prepare students for retaking their GCSE.

When I was doing GCSE maths over the past few years, when I was in school and when I first came to college, I didn't have a clue whatsoever. When we went up to Functional Skills it was like, 'I'm getting all those simple things that I couldn't do before.' It was more where I needed to be.

General FEC, urban, 1,000 to 2,000 GCSE students
English learner

- Other providers were already suffering a negative impact of entering all GCSE Grade D English and mathematics students for GCSE resits regardless of their perceived readiness, with many failing to gain a C thereby affecting student confidence and provider performance, and therefore were reticent to enrol students with lower grades onto GCSE which would exacerbate these impacts.

... At one point we were, against our better judgement, we were instructed that we had to put the grade E students in for GCSE as well. That was disastrous in terms of results because the jump from grade E or from Functional Skills Level 1 is far too great in one year, because we only offer one year programmes.

Sixth Form College, fewer than 1,000 GCSE students
English subject lead

- Several colleges do not view the new Functional Skills Level 2 qualification as an effective stepping stone for GCSE (they state a preference for the retired qualification). Senior leaders and teachers expressed concerns about new questions which are viewed as more difficult to comprehend, less about the application of each subject and unnecessarily challenging for students. The

changes to Functional Skills have, according to many teachers, reduced the effectiveness of Functional Skills.

We don't do the Functional Skills Level 2... having used that qualification for many years, is that I no longer really feel it's fit for purpose... I think the Functional Skills 2 add rigour to make it seem like it was Grade-C equivalent. I think that they made it almost impossible to pass... for a lot of students, the Level 2 Functional Skills and the students it was aimed at, it wasn't appropriate, because if students are not doing GCSEs they are vocational. They want something which is functional... It doesn't help with confidence, and confidence building is one of the things that are critical for maths and English when you're talking about resit students.

General FEC, urban, between 1,000 and 2,000 GCSE
Senior leader

In addition, the targeted application of word and number that used to be the key selling point of the qualification has been diluted through the use of more abstract questions more similar to GCSE.

Timetabling and the composition of classes

Factors with the potential to influence teaching and learning practice include the frequency, timing, length and size of classes, and the composition of students in class differed by provider . Here we consider the decisions which have directly or indirectly led to the structure of English and mathematics classes for the providers in this sample. We identify their perceived positive and negative impacts.

Timetabling

The timetabling of English and mathematics lessons was recognised as a logistical challenge by the overwhelming majority of colleges participating in the research. On average colleges are delivering about three hours of GCSE teaching and one and a half to two hours of Functional Skills instruction per subject. So for a 16 to 18 year old who achieved a Grade D in English and mathematics, six hours of study per week needs to be scheduled into their timetable in addition to their elective subject. The scheduling of these lessons appears to be slightly less challenging for colleges where senior management teams prioritise English and mathematics teaching, often timetabling these before the elective subjects. This provides greater opportunity to plan the time of day that they are held, their frequency, length, size and composition of students.

Mathematics and English are the first things that go on the timetable ... and then the rest of the curriculum wraps around that [so English and mathematics are] built in, not bolted on.

General FEC, semi-urban, between 1,000 and 2,000 GCSE
Leads of English and mathematics

Where primacy has been given to the scheduling of English and mathematics lessons in colleges, these sessions are typically arranged to take place in the middle of the day and in between classes for elective subjects which are typically more popular for students. This is in an attempt to maximise attendance and reduce the likelihood of students arriving late to sessions or missing classes because they have left college early.

We try not to have [lessons] first thing in the morning ... because if students are going to dip out of anything, they're going to dip out of their English and mathematics ... We try not to have it at the end of the day, or on a Friday afternoon ... Having said that, though, there's only so much you can fit into the timetable ... there are only so many hours in the day, and there are only so many teachers who can teach these groups of students. So, in an ideal world, it would be lovely to have everything starting about ten and finishing about half past two, or three o'clock, but you can't do that.

General FEC, urban, between 1,000 and 2,000 GCSE
Senior leader

The timetabling of English and mathematics is significantly more challenging for colleges where elective subjects have primacy. The scheduling of English and mathematics is an indicator of the strategic prioritisation given to the subjects by providers. In a number of cases, providers with lower pass rates timetabled elective subjects first.

Mixed ability / mixed curriculum classes

All colleges in the sample used diagnostic tests / prior attainment in some way to make student-centred decisions about class composition. In the case of Functional Skills syllabus, students are often streamed according to the level of qualification for which they are studying with Grade E recipients following Level 2 or Level 1, and those with a Grade F or lower in classes studying Level 1 or entry.

If a student comes in to do English with a Grade 'D', we automatically put them onto a GCSE resit course ... Students who come in with 'E's and 'F's-, ... We give them a diagnostic and... [if that confirms their level of ability], we put them on a Level 1 Functional Skills. [if the diagnostic rates them higher], we put them into the Level 2.

Sixth Form College, urban, fewer than 1,000 GCSE
Senior leader

Streaming by ability

One college¹⁵ planned to stream GCSE lessons by laying on specific classes only for students who were due to retake their GCSE exam in November. The senior manager said this would enable teachers to work with students in a targeted way to give them the time in small classes to build on specific areas of knowledge to ensure they are in the best position to retake the exam and achieve a minimum Grade C. However, this requires an early diagnostic test result in order to fit to a tight November resit timetable.

Streaming by ability in general enables teachers to target their lessons at a level most appropriate to the skills and knowledge of the student. Such measures are in addition to identifying specific areas of strength and weaknesses of individual students using diagnostic tests and tailoring lessons to meet their needs (as per Section 4).

I feel more, like, comfortable in maths and English as well. I feel more free to just ask when I need help compared to at school because I feel like if we're retaking it, we're all there for the same reason. Yet if we're at school, we're all, sort of, fighting against each other, who's going to pass and who's not.

General FEC, semi-urban, fewer than 1,000 GCSE
Learner

Aligning English and mathematics with the elective curriculum

Some colleges coordinate the timetabling of English and mathematics classes by asking curriculum areas to select particular, pre-defined slots in the schedule, this is a logical way to arrange the timetable if students following a particular course are all available at the same time.

Other colleges, whether employing a centralised or dispersed approach to their English and mathematics delivery, have purposefully chosen to design their class compositions according to the elective subjects followed by students. The motivation for this latter approach is to align the teaching of English and mathematics with that of the core subject. Where timetabling allows, the colleges most commonly have classes comprising students from one to three subject areas. Those classes including students from more than one course are often with students of similar subject areas, for example IT and business management. This is to ensure there is some similarity in interests between the students.

There are two stated principal benefits to coordinating students in English and mathematics classes by curriculum area:

¹⁵ FEC; urban catchment; good pass rate for English and mathematics, fewer than 1,000 students

- The first is that lesson material can be tailored to reflect the elective subject. The purpose is to make topics studied in English and mathematics classes more relevant and interesting for students. By increasing the relevancy of the lessons it is anticipated that students' interest in learning will be increased and therefore their performance improved. Several examples of the ways in which teachers have tailored their lessons to students of particular courses are outlined below.
- The second advantage reported by college representatives is students feel more comfortable in a learning environment surrounded by their peers and friends. This was perceived to be particularly important given the confidence and motivation issues of students previously outlined in this report (see Section 3). The inference here is that more confident students will be better able to learn and potentially achieve in exams.

A few teachers mentioned that this curriculum-based approach reduced the level of engagement from students. They suggested that the students were so comfortable working with their peers that their levels of behaviour and concentration were lower than when classes comprised students from a greater mix of subject areas. In these instances teachers felt that students were not performing to their best ability and this could affect their learning potential.

The GCSE English team approached me on Friday and said ... 'When you've got mixed groups, actually, sometimes that's better. If you've got a couple of smart science students, a couple of adult learners in there, a couple of something else, it sort of lifts the thing.' When you've got a whole group of reluctant plumbers, that's a difficult class to teach.

General FEC, urban, 1,000 to 2,000 GCSE students
Senior manager

Choices governing the length of English and mathematics classes

As mentioned earlier in this section, the colleges in our sample typically delivered approximately three hours of GCSE and two hours of Functional Skills English and mathematics teaching to students per week. There was variance between providers in terms of the length and frequency of the classes. These ranged for GCSE lessons from three hours per session once per week to sessions of 50 minutes four times per week (the latter often within sixth forms). The different lesson lengths present their own benefits and drawbacks, for instance:

- Shorter lessons taking place several times per week enable students to maintain their concentration in lesson and build on the knowledge they remember from a recent, previous class. However, this risks students having insufficient time to embed that knowledge during the class given its relative shortness in length; and

They receive, normally, 150 minutes per week. ... We break it in to two 75 minute sessions in the week. We felt that was the best approach because that ensures then that the experience isn't too excessive. Whilst there are colleges, I'm aware, that do the three hour models, there's a view that that's too long based upon our learner feedback.

General FEC, urban, 1,000 to 2,000 GCSE students
Senior manager

- Longer lessons held once per week allow students to work through topics in more depth, for instance having the time to listen to the theoretical instruction, then applying this to some examples as a group, before undertaking mock exam questions individually. However, the risks are for students to forget knowledge by the time of their next lesson, problems with concentration over a longer period and that non-attendance has a more detrimental impact. In addition, a specific lesson length suits some students but not others making a final decision on the ideal lesson length difficult to achieve.

Student 1: We have three hours of maths, three hours of English. That really helps. It's better than just a one hour lesson, because I feel like you're getting the chance to understand the meaning of stuff. So, you start at the bottom, you get a lower level sheet and then work up. I feel like that's better than just a quick description in a one hour class and then that's it, it's over, and you don't revisit that again. I feel like here, you revisit it, and I think that's really helpful.

Student 2: Three hours in one afternoon, even with a half an hour break is just quite long.

Student 3: Yes. Towards the end of the lesson, after you come back from break, you just can't be motivated any more. It gets tiring and you start to lose concentration and everything.

General FEC, urban, between 1,000 and 2,000 GCSE
Mathematics GCSE learners

For many senior managers, lesson length is governed by timetabling considerations. For instance, a consideration of the length of average elective subject lessons in the college and fitting in the English and/or mathematics lessons around this. Typically, our interviews suggest that sixth form colleges have shorter lessons in line with shorter periods for teaching academic subjects compared to longer lessons in FE colleges for the instruction of vocational courses.

Analysis of the data suggests longer lesson length and a limited number of sessions per week is more likely to happen in colleges that prioritise the elective curriculum in timetabling. Representatives from colleges with the longest and most infrequent English

and mathematics lessons often said their college's timetable limited their ability to reduce the length and increase the frequency of these classes.

The problem is that unlike a school, we don't have a fixed timetable. I mean, everybody is not doing the same thing ... So, for an FE setting, it's logistically more difficult. [Sports] often have longer sessions, three hour, half-day sessions rather than an hour and a half because it works better for that area. Those sorts of practices have grown up over years, decades in further education because we've been focussed very much on what works for that vocational area. So, it's really raising fundamental questions about how we organise ourselves as a college to have to do this level of English and maths alongside it.

General FEC, semi-urban, between 1,000 and 2,000 GCSE
Senior leader

Class sizes and the impact on teaching and learning

On average, GCSE classes had seventeen students. A consistent message received from learners interviewed for this study is that their English and mathematics classes at college have fewer students than they had experienced at school. This was a positive for many students.

The benefits of smaller class sizes included: having more confidence to ask the teacher questions in front of their peers; the teachers being able to answer more of the questions being raised by students; and, the teachers being more easily able to control the behaviour of students in the class. The learners suggested that these conditions helped them understand the topics being taught and, learn more by progressing more quickly through the teaching materials than they had been able to do at school.

Student 1: The smaller classes are very helpful because it's more like a one to one.

Student 2: [At school] they've got too many students. The class ends up becoming overcrowded so the teacher's attention span reduces to the pupils who are more advanced than the rest.

Student 3: I feel like they pay more attention to us when we don't understand something. It's like you don't just have to move on.

Student 4: If you've got a class of 30 students ... Some students will be too proud and they won't ask for help even if they're stuck. They don't want to get embarrassed. Smaller classes help their confidence ... they can ask for help.

General FEC, urban, 1,000 to 2,000 GCSE students
Learners

Issues with recruitment and staffing

The practical outcomes of the government's English and mathematics policy has been to:

- Increase the number of students studying the subjects in colleges; and
- Shift the proportion of these studying GCSE rather than other qualifications, such as Functional Skills.

... [Student numbers] increased by 50%, so we had 200 odd learners doing each English and maths the year I took on the role [2014/15] and then in September that year it went up to 480 odd students overnight literally for the next academic year. That was 2015/2016 ... It's now [2016/17] just under 400 per GCSE maths and GCSE English.

General FEC, urban, fewer than 1,000 GCSE
Senior manager of English and mathematics

As a result providers need more English and mathematics teaching staff able to deliver GCSEs. This section examines the approaches providers have taken to recruiting staff to meet the increasing volume of English and mathematics students and the ways they have ensured existing and new staff have the requisite skills and experience. As in many other areas of strategic decision making, the data suggests colleges reacting to the policy earliest are now in a stronger position in terms of staffing. In the majority of cases in our sample senior staff had upskilled existing staff and recruited externally to ensure their institution had the sufficient number of staff, and with the appropriate qualifications and experience, in place to deal with the large increase in GCSE student numbers.

Upskilling or retraining existing staff

Senior managers at several providers had resourced their English and mathematics GCSE teaching positions internally through upskilling Functional Skills teachers or reskilling teachers of other related subjects (for example increasing hours and reskilling engineering lecturers to teach mathematics). This has a number of benefits as the recruits are a known quantity, have existing *FE sector* teaching and relationship management skills, and in the case of FE colleges, are often experienced in motivating students. Such staff also know the teaching and learning culture of the provider. The ETF's English and mathematics teaching enhancement programmes¹⁶ are viewed positively by many of the senior managers and teachers. Interviewees say these

¹⁶ See <https://booking.etfoundation.co.uk/course/details/3?return=browse> and <https://booking.etfoundation.co.uk/course/details/4?return=browse>

programmes are very useful in providing existing staff with the appropriate training, experience and tools to deliver English and mathematics teaching effectively.

... We did the ETF Maths Enhancement programme where we had about fifteen of our staff from various other disciplines, who had a Level 3 qualification in maths who thought, 'Well I'll try and see if maybe I'd like to do a bit of maths teaching.' And from that we got two members of staff that they would quite like to do the GCSE in maths, and we also did the same with English and again with two members of staff who had a Level 3 qualification in English and said that they wouldn't mind teaching some GCSE English after doing that. So I think it certainly feels to me, that the way that we get staff to be able to teach is by growing your own. It's about giving these incentives, these schemes, rather than just trying to go out there and advertise for staff to come in and teach.

General FEC, semi-urban, fewer than 1,000 GCSE
Senior leader

Teaching assistants in some colleges are trained in English and mathematics delivery. The classroom benefit of this training is that teaching assistants can provide subject-specific support knowledgeably to students which frees up the teacher to focus on delivering the lesson in the most engaging way possible.

I couldn't do without [the maths teaching assistant]. It's like having another left hand because they... get to know the students much more than the tutors can, because we've got to deliver all of that information in a short period of time, to try and get them through their GCSEs. We're the ones firing the information at them, but they can take that little bit of a step backwards, because the pressure's not on them to deliver. Having that specialist knowledge [means] they are really able to help.

General FEC, semi-urban, fewer than 1,000 GCSE
English and mathematics lead

In addition to training existing staff to deliver lessons in English and mathematics, senior managers and teachers emphasised the effort they had made to increase the ability and confidence of non-English and mathematics teachers in the basics of the subjects. The aim of these interventions is to help support improve English and mathematics skills and emphasise the importance of this acquisition across all subjects.

Having an extra member of staff in English and mathematics lessons trained in the subjects, in addition to the teacher, to support all learners

General FEC, semi-urban, fewer than 1,000 GCSE students

Feedback from teaching assistants responsible for meeting students' with Education and Health Care Plans additional needs showed they also supported other learners by answering queries in class from those unconfident in asking questions to the subject teacher. The college trialled and has since implemented an approach whereby teaching assistants were given specific training in English and mathematics and promoted to the role of subject instructor. An instructor is present in each English and mathematics lesson to help teachers answer students' questions and assist in learning delivery in addition to their support role. This means instructors are knowledgeable and understand the needs of the students with the greatest challenges and can share this knowledge with the subject teachers to ensure the best support. The response to this additional support role has been positive. During the interviews:

Teachers said they are able to more efficiently deliver the subject curriculum and cover all of the necessary topics as they have assistance from the instructors to answer the range of queries from students who require more support and reassurance; and

Learners suggested they get more attention in their English and mathematics classes at college than at school and indicated that the instructors understand their individual needs and have a rapport with them which makes them feel more confident to ask them questions of clarification rather than interrupt the class teacher and draw attention to themselves.

The most commonly reported ways in which this support and training was provided to other staff was through:

- Teacher training days focused on English and mathematics skills;
- Resources designed to help these teachers integrate exercises into their own classes;
- Performance management through teachers being monitored against English and mathematics targets; and
- English and mathematics specialists sharing good practice examples either formally at meetings or informally in staff rooms with elective subject teachers.

Senior managers reported two main impacts from these activities. The first is that all staff were better able to consistently communicate the importance of English and mathematics to students in lessons. Secondly, the general quality of English and mathematics teaching for all staff improved, not just English and mathematics specialists.

Processes and issues in recruiting new staff

Most provider's first attempts to resource the teaching was through internal recruitment. However, many providers also sought (and continue to seek) experienced specialists to deliver and manage these subjects. The majority of colleges in this study have recruited new English and mathematics teachers and subject / curriculum managers.

Senior managers typically state that the minimum level of qualification they consider is for the teacher to have a level above that which they are teaching, for instance a GCSE teacher trained in the subject to at least A-Level. However, senior managers also want teachers to have or be studying towards a specific teaching qualification with most saying they *ideally* seek a PGCE qualification.

Senior managers say teaching qualifications provide a pedagogical underpinning that aligns with the subject knowledge; however the ideal recruit will apply technical teaching skills in FE. Some colleges have adapted specific interview tasks to ensure teachers have the appropriate teaching approach for their institution, for example:

Micro-teach is where a potential person that wants a position will come and do a fifteen-minute subject delivery to a group of learners, around maths and/or English. This is not just for the specialists, that's for all staff that we recruit. We're looking for what they can bring to embed maths and English within the vocational and the academic subjects as well because we recognise that learners need constant guidance about the importance of what maths and English is all about, not just whilst they're in a specialist maths and English class. It's vital that they have knowledge and understanding of what's needed to get them jobs, what industry wants, and how we can guide them through getting better at it.

General FEC, urban, More than 2,000 GCSE students
Senior leader

A couple of colleges recruited primary school teachers. This decision was motivated by the view that the key gaps in knowledge of the 16-18 year olds were the fundamentals of the subjects which should have been taught and understood pre-11 years old. Therefore primary schools teachers were perceived to have the relevant skills and tools to address these issues. These providers anticipate that these teachers will be able to strengthen students' basic knowledge of the subjects and in doing so increase their confidence and motivation to study English and mathematics. The recruitment of these teachers however was too recent for any notable impact to have been recorded yet.

I've got two who are maths specialists as primary school teachers, and they are fantastic, because they actually nurture students, and that's what they need. They need somebody who's going to support them and bring them self-esteem, because they've come in labelled as failures.

General FEC, semi-rural, More than 2,000 GCSE students
Senior manager of mathematics

However, senior staff from many providers report difficulties recruiting English and mathematics teachers for numerous reasons including: a small pool of local labour; uncompetitive pay compared to secondary schools; and, a poor perception from potential recruits about the sector. In the main, senior managers report it harder to recruit mathematics teachers compared to English teachers, although they struggle with both.

'It's not attractive is it?' If you like maths, you're dealing with a whole load of students who don't like maths, you know, so that's potentially depressing.

General FEC, semi-urban, between 1,000 and 2,000 GCSE
Senior leader

The senior managers interviewed suggested a number of ways in which they had tried to overcome their recruitment challenges. These included:

- Golden hellos, for instance a one-off payment of many thousands of pounds to encourage teachers to apply. One cited drawback of this initiative however was whilst it had increased the volume of interest it did not necessarily improve the quality of candidates.

We also offer a golden hello of up to £20,000 that has not really had the success in bringing high quality people through... There doesn't seem to be a lot of movement within the sector.

General FEC, urban, between 1,000 and 2,000 GCSE
Senior manager of English and mathematics

- Teachers incentivised to recommend a friend for a financial reward.
- Improved contractual arrangements for example, higher salaries, faster progression routes, better conditions e.g. fewer teaching hours, more independent training time, or more holidays.

Where a full complement of staff at the desired level of experience and expertise has been achieved and these staff retained a number of benefits to teaching and learning were identified:

- Teachers to build a relationship with students, where the latter have the opportunity to learn a particular approach and style and develop a rapport. Many learners criticised their previous experience of learning in school (and subsequent exam performance) on the turnover of staff. From the learner perspective, high teacher turnover represented confusing teaching approaches and not being able to develop a relationship with the teachers where they felt understood.

I just got messed around constantly with teachers and one of my teachers went off three months before my GCSEs so I ended up with cover

teachers, A-Level teachers that didn't teach GCSE so didn't know what they were doing.

General FEC, urban, 1,000 to 2,000 GCSE students
English learner

- English and mathematics teachers can develop an agreed approach to the delivery of English and mathematics and share responsibility.
- Senior staff can manage the performance of permanent staff and ensure that agreed approaches are implemented.

6. Conclusions

The quality of teaching and how lessons are delivered are two of many factors that potentially impact on GCSE resit pass rates for students who achieved a D Grade (or lower) in English or mathematics (the “D Grade” policy). DfE management data shows that the volume of these students entering further education institutions is magnitudes higher than schools and sixth forms. Furthermore, a larger proportion of these students achieved a grade lower than a D enter further education colleges. All colleges operate in a competitive environment for attracting students and staff and the stage at which strategic decisions about implementing organisational practices to plan for the change in policy were made at different times throughout the sector. No clear relationship between teaching quality and pass rates can be shown in the evidence presented in this report.

A large number of students have been affected by the change in the D Grade policy that, in turn, has led to a major reorganisation in the delivery of English and mathematics in further education colleges. Prior to the D Grade policy, senior college leaders suggest the ratio of students on Functional Skills English and mathematics qualifications to GCSE was roughly two-thirds to one third; since the introduction of the D Grade policy, senior leaders say that ratio has reversed. The qualitative evidence suggests providers who planned early for this change have been more successful in implementing the policy and are achieving better overall pass rates. Further secondary analysis of DfE data over the next couple of years is necessary to quantitatively test this hypothesis.

Data on students’ GCSE pass mark (as opposed to grade) was not held in a central repository at the time of the study fieldwork; instead, providers asked schools to provide this. Some schools did whereas others did not. Knowledge of the mark itself is useful to providers because it helps them improve their diagnosis of a student’s ability (especially the within D grade distribution) and devise the right learning approach for each individual. Providing the GCSE English and/or mathematics mark as early as possible for all students moving into further education would help providers identify the right learning options for individual students.

Whilst the overall nature of pedagogy throughout the sector is broadly similar by institution, there is a diverse range of solutions to contextual and delivery issues put in place at the organisational level. Critically, these solutions fit a given situation. In the main, there is no ‘best practice’ in implementing the D Grade policy; what works for one will not work for another provider. However, there is a lot of good practice in the sector that aligns to a providers’ unique context. Successful colleges test solutions, learn through trial and implement innovative solutions to the challenges they face. The sector is typically flexible and adaptable to change.

A few sectoral approaches and concepts related to effective teaching and delivery were found. The quality and nature of the student-teacher relationship was central to nearly all college delivery. Most tried wherever possible to foster an adult-to-adult relationship

between the teacher and student to create a counterpoint to the child adult relationship which had been unsuccessful (in terms of GCSE passes) at school. Students recognised a higher level of support provided to them at college compared to school and, in a number of cases, learning difficulties that were either unknown or unreported from school were diagnosed by college support teams. College teaching and delivery works well when the systems in place to manage the student transition from school to a more mature environment work quickly and effectively.

The D Grade policy is demotivating for some students as they being asked to continue with a qualification that they perceive they have “failed”. Colleges use a variety of methods to mitigate the behavioural issues that arise from demotivation. An important component on these strategies is effective diagnosis of current ability in English and/or mathematics as early as possible after enrolment. In this way, colleges can develop an appropriate learning plan for that individual and place them on the right qualification that will see them succeed. The quality of information, the speed with which it can be acquired and the quality of systems in place to make decisions about the right duration and learning pathway are important. Getting these three factors correct increases the chances that each student is on the most suitable type of training for them.

By nature, the D Grade policy is centred on an examination pass mark; achieving a C or above. Colleges concentrate on two specific activities in meeting this goal: identifying gaps in knowledge of the student; and how students approach the process of an examination. GCSE lessons are therefore heavily structured around curriculum requirements and focused on how to pass an examination. For students with a good general foundation of knowledge, this process works well. However, there were many examples given as evidence of students who lacked some primary school level knowledge on some topics, even for students with a D Grade. A comprehensive intervention is necessary for such students. A blanket policy of enrolling all students with a D Grade onto GCSE regardless of their knowledge of English or mathematics fundamentals may be problematic for some target students.

The volume of students to which the D Grade policy applies provides some opportunities for economies of scale for colleges. Nearly all providers had central support structures in place for students and were able to resource teaching assistants in class for eligible students. A few colleges were very efficient in managing resources evidenced by, for example, one college resourcing central support teams with trained English and mathematics teachers. This research study was not asked to look in detail at the way different college leadership teams planned and used central resources. However, the evidence suggests exploring aspects of effective financial management in the sector would be a potentially useful line of future enquiry.

Economies of scale also affects how English and mathematics departments are structured and how lessons are delivered. For example, there are two broad structural designs for the strategic management of teachers: centralised structures in which

teachers are part of a single English and/or mathematics department; or dispersed structures in which teachers are members of curriculum subject areas under a single strategic senior management team for English and/or mathematics. The latter usually requires large curriculum departments to operate and justify their own English / mathematics specialist. As a result, the size of the college has some bearing on the variety of approaches that can be taken towards teaching and delivery.

The fieldwork highlighted the excellent work being carried out across the further education sector. A great deal of good practice and innovative methods supporting teaching and learning of English and maths was found. Some of the effective practices observed in colleges is illustrated in the case studies accompanying this report



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