

## Road-testing the Qualifications Assessment Framework

In January 2021 a small group including those with expertise in research and policy, as well as an experienced subject leader in a large post-16 provider met online to ‘road test’ the Qualifications Assessment Framework. This involved discussing each question in the framework with a view to establishing (i) whether the questions were answerable; and (ii) whether any criteria, components or questions were missing. The following tables capture the raw data from the discussion and provide the basis for the summary in the accompanying Working Paper. The ‘conclusion’ sections are an attempt to synthesise and develop consensus.

Stakeholder group A. Students	
A1. Student market for the qualification	
Q.1. Which students is the qualification primarily intended to serve?	<ul style="list-style-type: none"> <li>• Post-16 students who have did not achieve a grade 4 or 5 in GCSE Mathematics at first sitting, even if they are working towards a different qualification first.</li> <li>• Some adult learners will also resit GCSE Mathematics. In 2018/19 some 55,000 adults took GCSEs in English and Mathematics. See <a href="#">Why adults benefit from GCSEs too - Learning and Work Institute</a></li> </ul>
Changes over time	<ul style="list-style-type: none"> <li>• Until GCSE resits policy was introduced (in 2014), there was no requirement that students who did not achieve a ‘good pass’ in GCSE English and Mathematics should repeatedly resit the exams (or else take a level 2 Functional Skills qualification in Mathematics until they did make this grade.</li> <li>• The Certificate in the Use of Mathematics was an alternative qualification accepted by universities and employers before GCSE became mandated. Use of Mathematics was popular among students and employers, in particular because of its focus on financial mathematics. This qualification is no longer offered.</li> <li>• Grade boundaries have shifted over time, and the alphabetical grading systems has been replaced by a numerical grading system. When the latter was announced, grade 4 was stipulated as the minimal requirement in GCSE Mathematics. There was a suggestion that the retake requirement might shift from grade 4 to grade 5 after two or three years. This could still happen.</li> <li>• Russell Group universities have been considering demanding a grade 5 in GCSE Mathematics as a requirement for undergraduate course entry. See also <a href="#">Qualifications   Informed Choices</a></li> </ul>
Characteristics of students	<ul style="list-style-type: none"> <li>• Students may be retaking the whole qualification, or else just resitting the exams. It is assumed they have already sat the exam at least once.</li> </ul>

	<ul style="list-style-type: none"> <li>• Along with those with a grade 3 in GCSE Mathematics, some students with a grade 1 or 2 in GCSE Mathematics may retake or resit the GCSE.</li> <li>• Resit students may be aged 16 or older (excluding adults).</li> <li>• Since the condition of funding stipulates that students must resit the exams until they achieve a grade 4, some students may resit the GCSE exams multiple times.</li> </ul>
Consequences of existing GCSE resits policy	<ul style="list-style-type: none"> <li>• Since some students retake the whole qualification and others resit it, the curriculum can be a different experience from the qualification.</li> <li>• Whether conceptualised as a 2 year retake programme or a November resit, the GCSE qualification is being used for different educational ends.</li> <li>• Some colleges run a full 2 year retake programme for students with a grade 1 or 2 in GCSE Mathematics, while others run a stepping-stone programme. Some colleges offer both.</li> <li>• Many colleges – and HEIs – are now demanding students have grade 5 in GCSE Mathematics in order to access certain courses.</li> </ul>
Notes	<ul style="list-style-type: none"> <li>• There are two points during the year when students may resit the GCSE.</li> <li>• In considering GCSE retakes and resits, all that matters is grade improvement. Developing the mathematical skills needed for a particular vocation and for everyday life is a secondary concern.</li> </ul>
Existing sources of evidence and information	<ul style="list-style-type: none"> <li>• Data published by the Department for Education (eg <a href="#">Level 2 and 3 attainment in England: Attainment by age 19 in 2018 (publishing.service.gov.uk)</a>; <a href="#">Level 2 and 3 attainment by young people aged 19 in 2019 - GOV.UK (www.gov.uk)</a>)</li> <li>• <a href="#">AQA All About Maths - Certificate in Use of Mathematics (4350)</a></li> <li>• <a href="#">Qualifications   Informed Choices</a></li> </ul>
Gaps in data/evidence	<ul style="list-style-type: none"> <li>• Summary data published by the Department for Education do not provide sufficient granular detail (eg triangulation of results by gender, age, ethnicity and eligibility for free school meals).</li> </ul>
Conclusions	<p>Post-16, GCSE and Functional Skills Mathematics serve different students and, by extension, different student needs. There is an entrenched cultural prejudice in favour of GCSE Mathematics, based on the requirements for university entry (traditionally perceived as the preferred progression route post-18) and related to this, a lack of parity of esteem between academic and vocational pathways.</p>

## Stakeholder group A. Students

### A1. Student market for the qualification

Q.2. What needs of students is the qualification intended to meet, and what needs does it actually serve?	<ul style="list-style-type: none"><li>GCSE is a 'gateway' qualification, so the specific need of students is in meeting the minimum threshold required for progression to further study in FE or HE, or employment.</li></ul>
Notes	<ul style="list-style-type: none"><li>The GCSE curriculum is so broad that the resit is not 'fit for purpose' in providing students with the specific mathematical skills they will need for their future desired employment. This makes it very difficult to motivate them.</li><li>The GCSE does not necessarily develop the mathematical skills required for citizenship.</li></ul>
Sources of evidence and information	<ul style="list-style-type: none"><li>Anecdotal reports from teachers.</li></ul>
Gaps in data/evidence	<ul style="list-style-type: none"><li>Most T Levels have yet to launch, so it is too soon to be certain of entry criteria.</li></ul>
Conclusions	The current GCSE Mathematics qualification has value as a 'passport' to further study or employment, but it does not actually furnish students with the mathematical knowledge and skills they need for their futures. Functional Skills, which is increasingly recognised by employers, is mandatory for students studying for Apprenticeships, but level 2 Functional Skills it is not generally sufficient for entry to university and may not be sufficient for T Level entry.

## Stakeholder group A. Students

### A1. Student market for the qualification

<p>Q.3. What is the <b>take up</b> or <b>intended take up</b> of the qualification?</p> <ul style="list-style-type: none"> <li>• Proportion and numbers of students who take the qualification.</li> <li>• Diversity (eg gender) and other biases.</li> </ul>	<ul style="list-style-type: none"> <li>• Department for Education data record: <ul style="list-style-type: none"> <li>○ the number of 16(+) year old students with grade 3 who resit the GCSE.</li> <li>○ other students aged 16(+) could be doing Functional Skills.</li> </ul> </li> <li>• Owing to a number of adult learners taking the qualification, the total number of people taking GCSE resits may not be fully documented.</li> </ul>
<p>Notes</p>	<ul style="list-style-type: none"> <li>• As noted above, the range of students taking GCSE resits has changed over time since resits became mandatory. These differences are not necessarily tracked in the performance data.</li> <li>• Need to consider that resit decisions depend largely on the condition of funding (which requires all students with a grade 3 to resit the GCSE) and the different enrolment policies of colleges and independent learning providers that deliver 16–19 study programmes.</li> <li>• Colleges are entering a high proportion of students in Year 12 who have grade 2 GCSE Mathematics.</li> <li>• Few students can choose whether they resit the GCSE. For a very few, there may be a nuanced decision to be made as to the most appropriate qualification (GCSE or Functional Skills qualifications).</li> <li>• Some colleges also advise some students with grade 4 to resit.</li> <li>• Resits among students with grade 1 or 2 in GCSE Mathematics vary across colleges.</li> </ul>
<p>Existing sources of evidence and information</p>	<ul style="list-style-type: none"> <li>• Data published by the Department for Education (e.g. <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/641232/level-2-and-3-attainment-in-england-attainment-by-age-19-in-2018.pdf">Level 2 and 3 attainment in England: Attainment by age 19 in 2018 (publishing.service.gov.uk)</a>; <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/641232/level-2-and-3-attainment-by-young-people-aged-19-in-2019.pdf">Level 2 and 3 attainment by young people aged 19 in 2019 - GOV.UK (www.gov.uk)</a>)</li> <li>• <a href="#">MiFEC report</a></li> </ul>
<p>Gaps in data/evidence</p>	<ul style="list-style-type: none"> <li>• National collections on adult entry data.</li> </ul>
<p>Discussion and conclusions (based on reviewing DfE publications)</p>	<p>National data are available on entrants to and attainment in GCSE post-16 (the latter are aggregated according to attainment at grades 4–9 and age (17–19)). But data on attrition from these or Functional Skills courses are not reported. Specific data relating to Functional Skills entry and attainment (as opposed to Level 2 qualifications equivalent to GCSE) are not reported nationally. Also, it is not possible to differentiate the number of entrants to level 2 Functional Skills that previously failed GCSE from other students who are taking Functional Skills for the first time. The Government does not publicise any target measures for GCSE resits or Functional Skills attainment. As the MiFEC report has shown, whether students are entered for GCSE or Functional Skills is largely determined by the institutions they are studying at.</p>

## Stakeholder group A. Students

### A2. Outcomes and progression

Q.4. What proportion of students <b>achieves the target outcome</b> ?	<ul style="list-style-type: none"> <li>• Only 18% of all resit entrants nationally attain a grade 4.</li> <li>• Only a small proportion of resit students aged 16(+) achieves a grade 4 or above in their GCSE mathematics or improves their grade.</li> </ul>
Notes	<ul style="list-style-type: none"> <li>• 'Target' is somewhat ambiguous given (i) that not all students resitting the GCSE will be seeking to improve from a grade 3 to a grade 4 and (ii) that the Government has not published any target.</li> <li>• There are no published targets for different student groups (eg socio-economic status, gender and other biases).</li> <li>• However, providers are judged against the national dataset the Department for Education produces.</li> </ul>
Complications	<ul style="list-style-type: none"> <li>• Some students resit the GCSE repeatedly before they achieve a grade 4.</li> <li>• National performance data also show a decline in numbers achieving a grade 4, possibly because more colleges are entering more students. This heightens the need for progression (improvement) data. Nonetheless, too few entrants actually improve their grade.</li> </ul>
Sources of evidence and information	<ul style="list-style-type: none"> <li>• Published DfE data (eg <a href="https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/92122/post-16-pathways-at-level-3-and-below-nov-2020.pdf">Post-16 pathways at level 3 and below Nov 2020 (publishing.service.gov.uk)</a>).</li> <li>• Research by Impetus-PEF (<a href="https://www.impetus.org.uk/">Impetus</a>).</li> <li>• Cambridge Assessment (<a href="https://www.cambridgeassessment.org.uk/interim-report-3.pdf">RM23 text(1) (cambridgeassessment.org.uk)</a>).</li> <li>• <a href="https://www.nottingham.ac.uk/interim-report-3.pdf">interim-report-3.pdf (nottingham.ac.uk)</a></li> <li>• <a href="https://www.mifec.org.uk/">MiFEC report</a>.</li> <li>• Association of Colleges (<a href="https://www.aoc.co.uk/data-analysis">Data analysis   Association of Colleges (aoc.co.uk)</a>).</li> <li>• <a href="https://www.tes.com/news/gcse-resits-no-progress-for-most-english-and-maths-students">GCSE resits: No progress for most English and maths students   Tes</a></li> </ul>
Gaps in data/evidence	<ul style="list-style-type: none"> <li>• Essential data on grade improvement are not available.</li> <li>• Detailed progression and destinations data.</li> </ul>
Conclusions	<p>If they exist, then Government target outcomes for GCSE resits or Functional Skills are not publicly stated. However, the MiFEC study has shown that post-16 resit students may have various targets, including:</p> <ol style="list-style-type: none"> <li>1. To get to university;</li> <li>2. To get a job or secure a better job;</li> <li>3. To improve their overall qualifications profile and make them more competitive;</li> <li>4. To get on to another college course after completing their current one.</li> </ol> <p>Data relating to grade improvement and progression are lacking. The published national dataset on GCSE resit outcomes by student group (eg ethnicity and socioeconomic status) covers level 2 and is not qualification-specific.</p>

## Stakeholder group A. Students

### A2. Outcomes and progression

Q.5. What proportion of students improves their <b>employment and educational prospects</b> ?	<ul style="list-style-type: none"> <li>No reliable progression data exist that might provide a proxy indication of improved employment prospects.</li> </ul>
Notes	<ul style="list-style-type: none"> <li>It is, for instance, unclear whether or not students with grade 2 GCSE who are entered for level 1 Functional and gain level 2 Functional Skills would improve their employment prospects.</li> <li>This may depend on which career pathway they want to follow and the exchange value of level 2 Functional Skills for different pathways.</li> </ul>
Sources of information	<ul style="list-style-type: none"> <li>Apprenticeship job retention data (for 16–18 year olds). <a href="https://publishing.service.gov.uk">Post-16 pathways at level 3 and below Nov 2020 (publishing.service.gov.uk)</a>; <a href="https://www.gov.uk">Apprenticeships and traineeships data - GOV.UK (www.gov.uk)</a></li> <li>Only 2% of young people in the UK take apprenticeships. About 30% (180,000–200,000) of students in each newly arriving cohort in FE do not have a GCSE grade 4 or above. Many more have grade 3, rather than grade 2 or grade 1.</li> </ul>
Gaps in data/evidence	National analyses of the relationship between qualifications and economic returns exist, but may be insufficiently granular. It would be useful to have data on the nos./proportion of students on apprenticeships taking Functional Skills in relation to the nos. of students taking Functional Skills who are not on apprenticeships?
Conclusions	No reliable progression data exist.

## Stakeholder group A. Students

### A3. Confidence, motivation and engagement

<p>Q.6. What impact does resitting the qualification have on students' <b>confidence, motivation and engagement</b>?</p>	<ul style="list-style-type: none"> <li>• Students' confidence is low to begin with and they may become very demotivated because their confidence has been badly knocked by past 'failure' and because they have to resit the exams (possibly repeatedly).</li> <li>• There are competing demands on students' timetables, so they receive fewer hours of mathematics tuition compared to pre-16.</li> <li>• The mathematical content of GCSE Mathematics is not necessarily relevant to their study programmes.</li> <li>• Anecdotally, resit class attendance is generally lower than for other aspects of students' programme studies, presumably linked to the preceding bullet points.</li> <li>• For students who do achieve, the confidence they gain from gaining grade 4(+) or improving on the previous grade is valuable and can be very motivating.</li> <li>• Some students feel they are learning more, having moved from school to college.</li> </ul>
<p>Notes</p>	<ul style="list-style-type: none"> <li>• Students that have achieved a grade 1, 2, 3, etc, have a certain level of mathematical ability. It is important that, so long as they do not get worse grades when they resit, their achievement is recognised, even if it is below grade 4.</li> </ul>
<p>Sources of evidence and information</p>	<ul style="list-style-type: none"> <li>• <a href="#">MiFEC interim report 3</a> (students' views and attitudes to doing resits).</li> <li>• <a href="#">Centres for Excellence Motivation and Engagement Handbook (et-foundation.co.uk)</a></li> <li>• <a href="#">Hough - Main Public Output (Nov17).pdf (nuffieldfoundation.org)</a></li> <li>• <a href="#">CfEM blog: How do students feel about retaking GCSE Maths? - The Education and Training Foundation (et-foundation.co.uk)</a></li> </ul>
<p>Conclusions</p>	<p>Data on post-16 students' confidence, motivation and engagement are irregularly reported, but invariably studies find these to be at a low ebb. The 2017 report by Hough <i>et al.</i> from Manchester Metropolitan University for the Nuffield Foundation found that such students have low confidence levels and a tendency to rely on mis-remembered rules applied without understanding. These students are often disengaged from mathematics and many do not see it as relevant beyond a pass grade requirement for entry to further training or jobs. Students' negative past experiences mean they lack both motivation and confidence when required to resit their mathematics GCSE, which might explain the low resit success rate. The Association of Colleges (AoC) found that resit students understood why mathematics was important for progression and many vocational students were able to explain how mathematical skills related to their vocational area.<sup>1</sup> However, although the students in this study had a positive view about their chances of improvement and appreciated the support they were getting from training providers, they also felt that they 'failed' mathematics rather than seeing additional mathematics study as progress towards a higher grade, thereby establishing grade 4 as the minimum required for a 'pass'.</p>

<sup>1</sup> See <https://www.et-foundation.co.uk/uncategorized/cfem-blog-how-do-students-feel-about-retaking-gcse-mathematics/>

## Stakeholder group B. Education providers

### B1. Workforce capacity and capability

<p>Q.7. Are there the <b>teachers</b> available to deliver the qualification to the appropriate standard?</p>	<ul style="list-style-type: none"> <li>• Recruitment is difficult.</li> <li>• When the condition of funding was introduced, making GCSE resits a requirement for those who had not gained level 4 originally, there was a shortage of suitably qualified and experienced teachers able to teach GCSE Mathematics.</li> <li>• There is still a lack of appropriately qualified teachers in colleges who can teach mathematics well.</li> <li>• Lack of a national professional development strategy for the varied needs of staff assigned to GCSE resit classes.</li> <li>• Some providers do teach GCSE Mathematics well, and even in those that don't, there may be some fantastic teachers who do a good job. But the picture nationally is as stated above.</li> <li>• Non-specialist teachers have been asked to teach resit classes even when a suitably qualified teacher could do so.</li> </ul>
<p>Notes</p>	<ul style="list-style-type: none"> <li>• Some A level Mathematics teachers are not willing to teach GCSE Mathematics – beneath their worth/dignity. Also these A level teachers, who are used to having attendant students, might struggle to manage GCSE resit classes.             <ul style="list-style-type: none"> <li>○ Historically, before the resit requirement many came in, teachers were teaching Functional Skills qualifications and this was seen as the 'poor relation' to GCSE and were not subject specialists. When the requirement came in, they were told to take continuing professional development and they lost credibility.</li> <li>○ Also, while schools' maths teachers probably have a maths-related degree, many of these college teachers only have a level 2 maths qualification themselves.</li> </ul> </li> </ul>
<p>Sources of evidence and information</p>	<ul style="list-style-type: none"> <li>• Analysis of Ofsted college inspection reports (not necessarily Ofsted Annual Reports).</li> <li>• <a href="#">MiFEC report</a></li> <li>• <a href="#">Hough - Main Public Output (Nov17).pdf (nuffieldfoundation.org)</a></li> </ul>
<p>Discussion and conclusions</p>	<ul style="list-style-type: none"> <li>• It is widely acknowledged that there are too few mathematics specialists teaching in colleges (teachers with at least an A level in mathematics), but reliable hard data on the qualifications of teachers in the FE &amp; Skills sector are lacking (as has ever been the case).</li> <li>• There is some anecdotal evidence to suggest that mathematics specialists will be deployed to teach GCSE rather than Functional Skills classes, and that some refuse to teach Functional Skills classes.</li> </ul> <p>Manchester Metropolitan University's study for the Nuffield Foundation has revealed that teachers face various challenges in preparing students to re-sit mathematics GCSE, including:</p> <ul style="list-style-type: none"> <li>• the short amount of time teachers have to prepare students for resitting the examination, which is insufficient to be able to address gaps in their students' knowledge, and build their confidence;</li> <li>• the lack of access to sustained professional development to handle these challenges;</li> <li>• the fact that many teachers being drafted into teach resit students are not mathematics subject specialists; and</li> <li>• a lack of confidence, and motivation, in teaching resit classes.</li> </ul>



## Stakeholder group B. Education providers

### B1. Workforce capacity and capability

<p>Q.8. Are teachers <b>supportive</b> or <b>likely to be supportive</b> of the qualification, and <b>confident and motivated</b> to teach it?</p>	<ul style="list-style-type: none"> <li>• Teachers are trying to be positive about teaching resits, eg by supporting each other through sharing resources on online forums, because they are committed to supporting their students to achieve the best they can.</li> <li>• Teachers have become more confident and motivated since the condition of funding was introduced. However, they are not necessarily supportive of GCSE resits because the GCSE content is not a good fit with students' vocational studies or their lived experiences outside college.</li> <li>• But teachers are very demoralised on results day, due to low progression/achievement rates, which they take personally having invested so much energy in trying to help their students succeed.</li> </ul>
<p>Notes</p>	<ul style="list-style-type: none"> <li>• Teachers are very driven to support their students.</li> <li>• The teaching workforce is mixed in terms of qualifications and teaching experience, and its continuing professional development needs are therefore diverse.</li> </ul>
<p>Sources of evidence and information</p>	<ul style="list-style-type: none"> <li>• <a href="#">MiFEC report</a></li> <li>• <a href="#">GCSE resits: The resilience of maths teachers is inspiring   Tes</a></li> </ul>
<p>Gaps in evidence/data</p>	<ul style="list-style-type: none"> <li>• There is no TeacherTapp for the FE sector to canvass views on this, so further research is needed.</li> </ul>
<p>Conclusions</p>	<p>Anecdotally:</p> <ul style="list-style-type: none"> <li>• Teachers of GCSE resits and Functional Skills classes are committed and work hard to ensure their students succeed.</li> <li>• However, teachers of GCSE resit classes do not support the GCSE resits policy because they believe the GCSE specification is not suited to these classes' needs.</li> </ul>

Stakeholder group B. Education providers	
B1. Workforce capacity and capability	
Q.9. What <b>professional development</b> do teachers need?	<ul style="list-style-type: none"> <li>Professional development needs vary according to the qualifications, backgrounds and teaching experience of teachers.</li> </ul>
Notes	<ul style="list-style-type: none"> <li>The current continuing professional development (CPD) and prior qualifications required to teach GCSE mathematics are insufficient CPD is not diverse.</li> </ul>
Sources of evidence and information	<ul style="list-style-type: none"> <li><a href="#">MiFEC report</a>.</li> </ul>
Gaps in evidence/data	<ul style="list-style-type: none"> <li>Lack of regularly updated information.</li> </ul>
Conclusions	<p>Anecdotally, and as the MiFEC report has shown, professional development needs vary according to the varied qualifications, backgrounds and teaching experience of teachers and the amount of professional development they actually receive varies greatly, too. Lack of an entitlement to – and funding for – CPD are persistent problems that need addressing and professional standards for mathematics teachers in the FE sector set.</p>

Stakeholder group B. Education providers	
B2. Operational capacity and cost	
Q.10. Do schools and colleges have the <b>operational capacity</b> to deliver the qualification?	<ul style="list-style-type: none"> <li>Operational capacity has reduced since the condition of funding was introduced.</li> <li>The size of the student pool taking GCSE Mathematics has increased since the condition of funding was introduced, so provision is now a huge logistical challenge. Some colleges have run out of rooms for teaching English and mathematics.</li> <li>Also timetabling of these classes has always been and still is a significant challenge, given the range of needs of students to be catered for – including a large number of SEND students as well as students who are exempted from having to resit.</li> <li>Some colleges have to hire the local football stadium or other venue during exam periods, and even then, may have to shut their campuses.</li> </ul>
Notes	<ul style="list-style-type: none"> <li>Many colleges prioritise mathematics and English and build their curricula around these subjects. There are shifts between embedding maths in vocational areas or centralising it. Some colleges have created a new central space for their mathematics teaching.</li> <li>Providers do not have a consistent approach year on year to organising and timetabling GCSE. This also varies</li> </ul>

	according to the attitudes of the senior leadership team to mathematics and English.
Sources of evidence and information	<ul style="list-style-type: none"> <li>• Anecdotal reports.</li> <li>• <a href="#">RM23 text (1) (cambridgeassessment.org.uk)</a></li> <li>• Centres for Excellence <a href="#">research</a>.</li> <li>• Smith &amp; Dalby 2019.<sup>2</sup></li> <li>• Augar Review (<a href="#">Post-18 review of education and funding: independent panel report - GOV.UK (www.gov.uk)</a>).</li> </ul>
Conclusions	<p>England's 257 Further Education and sixth form colleges educate a substantial proportion of 16–18 year olds, with data from the Association of Colleges showing that, for 2016/17, 35% of this population were being educated in colleges compared to 23% being educated in state-funded schools. In fact, since the change in policy, colleges have had to take on considerably more students for 16-18 mathematics programmes than was the case previously, something for which they were ill-prepared.</p> <p>The condition of funding has prompted a significant increase in the numbers of GCSE resit students, which schools and, particularly, colleges have struggled to manage. It has also meant that colleges have had to restructure departments, recruit additional managers to provide leadership or support for mathematics and, against a wider national shortage, seek to recruit, train, and retain specialist mathematics teachers. Additional English and mathematics classes require complex timetabling, which may have knock-on consequences for provision of other courses.<sup>3</sup> FE colleges have consistently suffered from under-funding and lack of resources,<sup>4</sup> and the costs of recruiting and training staff have served to put colleges under additional financial strain.<sup>5</sup></p> <p>The pupil characteristics of colleges and state-funded schools differ in key respects. Colleges teach more students than schools. A higher proportion of college students claim free school meals (16% of 16–18-year-olds) compared to equivalent students in state-funded schools or academy sixth forms (8% of 16-18-year-olds). Colleges also have higher numbers of lower-attaining pupils than schools. The progress made in post-16 education by disadvantaged students who did not achieve a grade 4 in GCSE mathematics at the first opportunity is lower than that made by non-disadvantaged students.<sup>6</sup></p> <p>To compound matters, colleges are under severe pressure from inspections, targets and performance measures. Accountability and progress measures may be driving colleges to adopt behaviours that they do not desire and are not necessarily in their students' best interest. In particular, the pass/fail aspect of the Functional Skills qualifications is associated with a risk of high failure rates, and colleges may therefore be deterred from offering these qualifications so as</p>

<sup>2</sup> Smith, J & Dalby, D 2019 Retaking GCSE mathematics: a discussion document on post-16 policy, practice and possible futures. [See \[RS URL\]](#)

<sup>3</sup> Ibid.

<sup>4</sup> See [RM23 text\(1\) \(cambridgeassessment.org.uk\)](#), accessed 8 April 2021.

<sup>5</sup> See <https://www.gov.uk/government/publications/post-18-review-of-education-and-funding-independent-panel-report>

<sup>6</sup> Ibid.

	<p>to avoid the possibility of laying themselves open to an Ofsted inspection. Additionally, colleges may be at risk of losing funding if students who failed to gain a grade 4 in GCSE Mathematics fail to attend mathematics classes.<sup>7</sup></p>
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The Covid-19 pandemic has increased the challenges providers face in meeting the educational needs of their students, including those retaking GCSE Mathematics.

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<sup>7</sup> See [16 to 19 funding: maths and English condition of funding - GOV.UK \(ioe.ac.uk\)](#)

## Stakeholder group C. Education system

### C1. Educational coherence

<p>Q.12. How does the qualification fit into existing <b>curriculum pathways</b>?</p>	<ul style="list-style-type: none"> <li>• From a system perspective, there is no consensus as to whether students with a grade 1 and 2 GCSE entering an FE environment should study for a Functional Skills qualification or for the GCSE.</li> <li>• There are lots of circumstances where the mathematics course is well defined, eg students entering college with grade 3 GCSE to take an apprenticeship will take Functional Skills, but there are lots of other undefined situations where no decision has been taken nationally as whether a student would be better off studying Functional Skills or GCSE.</li> </ul>
<p>Notes</p>	<ul style="list-style-type: none"> <li>• Ofsted inspections are concerned with evaluating whether students are making progress and improving their (mathematical) skills.</li> <li>• Unlike the Department for Education, Ofsted is not concerned with how many or what proportion of learners attain a grade 4 when resitting GCSE Mathematics. Ofsted does not audit whether a college is meeting the condition of funding, but it is required to notify the Department for Education if it believes this is not the case.</li> <li>• What appears to be progress may be regress. For instance, a student with grade 1 at GCSE who transfers to Level 2 Functional Skills and gains a grade 2 would be considered to have regressed because Functional Skills should not be used as a stepping-stone: a Level 2 Functional Skills is a lesser achievement than a grade 2 at GCSE.</li> <li>• Some colleges use Functional Skills to avoid putting students forward to resit the GCSE.</li> <li>• Students on apprenticeships who achieve a GCSE grade 4 in level 2 mathematics, and then get level 2 Functional Skills, are going backwards.</li> </ul>
<p>Sources of evidence and information</p>	<ul style="list-style-type: none"> <li>• Ofsted inspection reports.</li> <li>• Anecdotal reports.</li> </ul>
<p>Gaps in evidence/data</p>	<ul style="list-style-type: none"> <li>• There are no regularly updated records on the range of policies adopted by different colleges.</li> </ul>
<p>Conclusions</p>	<p>There is ambiguity over whether Functional Skills and GCSE are sequential or parallel qualifications, but normally the former is considered a stepping-stone to the latter. There are, potentially, a number of factors that will determine whether a student studies for the GCSE or a Functional Skills qualification.</p>

## Stakeholder group C. Education system

### C2. Regulation and governance

Q.13. How well does the qualification fit into existing <b>qualification frameworks</b> ? Q.14. If considering a new qualification, when could it be launched?	<ul style="list-style-type: none"><li>GCSE belongs within the existing qualifications frameworks.</li></ul>
Sources of evidence and information	<ul style="list-style-type: none"><li><a href="#">AQA All About Maths - Certificate in Use of Mathematics (4350)</a></li></ul>
Gaps in evidence/data	<ul style="list-style-type: none"><li>Could consider, as an alternative to GCSE resits, Core Maths at level 2.</li><li>Need to consider the Certificate in the Use of Mathematics.</li></ul>
Conclusions	GCSE and Functional Skills are included in the Register of Regulated Qualifications.

## Stakeholder group D. Society

### D1. Market validity

Q. 15. What is the <b>exchange value</b> of the qualification? (Exchange value refers to the qualification's currency in enabling progression to higher-level study or employment.)	<ul style="list-style-type: none"><li>The Government considers GCSE to be the 'gold standard' of academic qualifications for students completing Key Stage 4.</li><li>Universities and employers normally expect applicants to have GCSE Mathematics of at least grade 4/C.</li><li>Many T Level providers appear to be stipulating grade 4 in GCSE Mathematics as part of their entry requirements.</li></ul>
Notes	Sources of data do not necessarily give a definitive answer.

Sources of evidence and information	<ul style="list-style-type: none"> <li>• CBI annual Skills Surveys (eg <a href="#">12546_tess_2019.pdf (cbi.org.uk)</a>).</li> <li>• Analysis of Government Longitudinal Education Outcomes data (but these are hard to gain access to).</li> <li>• Occasional research reports by the likes of Government, Education Policy Institute and the Institute for Fiscal Studies (though these are often linked to exploration of earnings capacity, which is more akin to a measure of the <b>use value</b> of a qualification)</li> </ul>
Gaps in evidence/data	<ul style="list-style-type: none"> <li>• Comparison of students on the same degree courses with grade 4 GCSE or level 2 Functional Skills is needed to see if there is any significant difference in their outcomes.</li> </ul>
Conclusions	It is hard to obtain definitive information on the market validity of GCSE resits and Functional Skills. Need to consult with employer representative organisations (eg CBI, FSB, British Chambers of Commerce).

Stakeholder group D. Society	
D2. HE/employer needs	
Q. 16. What <b>needs of HE and/or employers</b> does the qualification meet?	<ul style="list-style-type: none"> <li>• Answering this question requires deeper drilling into D1.</li> </ul>
Notes	<ul style="list-style-type: none"> <li>• Answering this question requires a detailed knowledge of the content of the qualification.</li> <li>• There is an internal language of communication in the employment sector that does not cross over well into other areas.</li> <li>• Discussion of the value of qualifications in an educational context does not translate well into employment.</li> </ul>
Sources of evidence and information	<ul style="list-style-type: none"> <li>• Not known. Would need to speak to a range of employers to be able to answer this question meaningfully, ie beyond the general requirement for numeracy or mathematical skills.</li> </ul>
Gaps in evidence/data	<ul style="list-style-type: none"> <li>• Apparent lack of directly relevant or consistent data sources.</li> </ul>
Conclusions	No data to hand.

## Stakeholder group D. Society

### D3. Social mobility

Q. 17. What effect does the qualification have on <b>social mobility</b> ?	<ul style="list-style-type: none"> <li>• Not known at a qualification-specific level.</li> </ul>
Notes	<ul style="list-style-type: none"> <li>• Likely to be indicative rather than mathematics-qualification-specific data available.</li> <li>• Reliance on occasional research reports.</li> </ul>
Sources of evidence and information	<ul style="list-style-type: none"> <li>• <a href="#">Post16-transitions-for-lower-attainers_summary.pdf (kinstacdn.com)</a> – Nuffield Foundation</li> </ul> <p>Proxy information from:</p> <ul style="list-style-type: none"> <li>• The UK Government's <a href="#">social mobility indicators</a>.</li> <li>• APPG on Housing and Social Mobility (eg <a href="#">Improving-Opportunities-APPG-Inquiry-full-report.pdf</a>).</li> <li>• <a href="#">The Contribution of FE and Skills to Social Mobility (publishing.service.gov.uk)</a></li> <li>• Research by Impetus-PEF (<a href="#">Impetus</a>).</li> <li>• Social Mobility Foundation.</li> <li>• Joseph Rowntree Foundation (eg <a href="#">Qualifications among the working-age population over time   JRF</a>).</li> <li>• Longitudinal Education Outcomes (LEO) data.</li> </ul>
Gaps in evidence/data	<ul style="list-style-type: none"> <li>• Apparent lack of directly relevant or consistent data sources.</li> </ul>
Conclusions	<p>Generally, very little information seems to be directly available on how GCSE resits and Functional Skills, specifically, impact social mobility. Analyses of existing datasets could shed light on this. However, a recent report for the Nuffield Foundation found that students from socioeconomically deprived backgrounds are overrepresented among resit students and that resit students are disadvantaged by barriers to progression including: 'insufficient information and guidance; the fact that entry requirements are often based on English and maths GCSEs (even when it is not clear why specific grades are needed); and the low availability and poor visibility of apprenticeships). Further, according to Impetus, 60% of young people from disadvantaged backgrounds do not have a Level 2 qualification (GCSE or equivalent) in mathematics and English by age 19, compared to only 30% of their better-off peers.</p>



## Stakeholder group D. Society

### D4. Social and economic impact

Q.18. What is the <b>impact</b> of the qualification on society and productivity?	<ul style="list-style-type: none"><li>• Not known at a qualification-specific level.</li></ul>
Sources of evidence and information	<ul style="list-style-type: none"><li>• <a href="#">UK Government Skills and Productivity Board</a> (announced on 30 September 2019 to offer ‘expert advice’ on how to ensure courses and qualifications on offer to students are high-quality, are aligned to the skills that employers need for the future and will help increase productivity).</li><li>• Wider contextual, less directly relevant, reports (eg <a href="#">Skills Mismatch and Productivity in the EU (europa.eu)</a>).</li><li>• <a href="#">The impact of the Covid-19 pandemic on problem debt in the UK   Pro Bono Economics</a>.</li></ul>
Gaps in evidence/data	<ul style="list-style-type: none"><li>• Apparent lack of consistent sources of data or reports published.</li></ul>
Conclusions	It is not known precisely how GCSE resits or Functional Skills impact productivity. However, the great negative impact of low-level numeracy skills in the population on the economy is well understood, and this acquired new sharpness given the currently known impact of the Covid-19 pandemic and the move towards an economy that is increasingly driven by technology and quantitative information (Pro Bono Economics).