Pearson response to the DfE Consultation Core Maths Technical Guidance

May 2014

Organisation details

Please tick if you want us to keep your response confidential.
Reason for confidentiality:

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Please mark an 'x' in the box that best describes you as a respondent.

x	Awarding organisation		School/College/University		FE representative body
	HE representative body		Employer & representative body		Union
	Society or professional body		Maths education organisation		Individual
	Other				

1 Have the qualification requirements been clearly set out in the guidance?

	Yes	x	No		Not Sure

The guidance that is given is broadly clear about the DfE requirements for performance table recognition. However there are a number of areas which have not been addressed and where clarity is required. Our comments on these areas are picked up under individual headings further on in this response. However, our main concern is that this guidance does not take into account the additional requirements that Ofqual may have. As such, it does not address some issues that are critical to development work, for example how standards issues and comparability between qualifications eligible for this measure will be addressed.

Paragraph 2.2 states that 'Qualifications in the Core Maths performance table category will not be regulated as a single qualification with specific conditions. Similarity of purpose will help ensure that qualifications in this category meet similar needs for students, employers, post-16 providers and HEIs.' We believe that qualifications with such a tightly defined purpose cannot be placed in a single 'category' without being seen as a single qualification type, and the expectation of end users will be that all qualifications that sit in this category will have an appropriate degree of equivalence.

We believe that there should be a set of requirements (industry standards?) agreed with the regulator to specify common approaches in key areas, such as an agreed standards setting methodology and common grading scales.

2 What are your views, if any, on the requirements and process set out in the guidance of the following characteristics that qualifications must demonstrate to meet the Core Maths performance table requirement? This may include comment on implementation as well as design.

2 a) Qualification purpose (section 2.2)

The qualification purpose is very wide-ranging.

Core Maths is designed to provide an appropriate course of study for all those who have gained a grade C and above at GCSE, whether they have demonstrated a high level of achievement at A*, or have scraped through with a low grade C on the Foundation Tier. This is a very diverse group of students who will be ready to continue their study of mathematics at very different starting points. A single qualification can address this diversity, but it might require some form of setting in teaching centres that would place an additional burden in a subject area that is already under immense pressure.

Courses should then aim to prepare this diverse group of students for the contexts they are likely to encounter in further vocational and academic study, in future employment and in life. There are some very significant differences in these requirements that will be difficult to properly address in a single qualification. It is not clear if the purpose of a particular individual qualification can specify an emphasis on one or more of these contexts, or whether all must be addressed equally. Allowing qualifications to have a greater – but not exclusive – emphasis on one or two of these contexts (vocational study, academic study, employment) would give employers and HEIs more opportunity to influence design and the purpose can be more accurately described for learners and end-users.

2 b) Size (section 2.3)

A minimum size of 180glh seems too large and we believe it could be a serious risk to provision and adoption in schools and colleges. We would urge a minimum size of 120 glh.

180 glh would amount to about 3 hours of additional mathematics study a week, which will place additional demands on resourcing in an area where many schools and colleges are already experiencing considerable difficulty in recruitment; 120 glh would still be a challenge, but more manageable.

From the point of view of the learner, our consultation work with HE suggests that courses which require the application of mathematics (but where mathematics is not the focus) do not require as much further mathematics study post-16 as 180 glh. Their advice is that undergraduates must be able to solve problems with the mathematics they have already been taught. They need to be mathematically confident, able to transfer their mathematics to new contexts and understand how to use data.

Where a learner is progressing to a subject with a greater mathematical focus, then they should be encouraged to take AS mathematics.

It is important that there is a clear difference in purpose between AS mathematics and 'core' mathematics.

2 c) Recognition (section 2.4)

Six letters of support seems the minimum number that should be expected; however given the aim that Core Maths qualifications prepare students for the wide range of contexts expressed in the Purpose section, it would seem reasonable that all letters should not come exclusively from one of these stakeholder groups.

2 d) Content (section 2.5)

The requirements are specified clearly. They do present some challenges for design, delivery and standard setting as the first cohorts of students will be building on their experience of the existing GCSEs, while subsequent cohorts will have taken the reformed GCSE. This issue is mentioned in the consultation document but should not be under-estimated.

The bulk of the content builds on GCSE level 2 content. Additional demand – beyond GCSE - can be built in through a focus on the selection and application of techniques, but this additional demand will feel different to the two cohorts identified above. This will need to be taken into account in both the initial standard setting activities, and when maintenance of standards over time is considered. This is not something that can be 'retro-fitted' to a specification and sample assessment materials after the design and development stage, but must be considered in parallel. We see this as one of the greatest risks to this project, and one which is not sufficiently addressed in this consultation or taken into account in the timeline. In our response to Question 2h we propose an alternative timeline in order that this and other issues affected by the current requirement for an August submission can be addressed.

2 e) Linear and synoptic assessment (section 2.6)

We support the intention that these qualifications have a linear approach to assessment.

We support the principle that these qualifications should have synoptic assessment which requires students to demonstrate the interconnectivity of mathematical ideas and to select and demonstrate mathematical techniques in new and/or unfamiliar contexts. There must be a consistently agreed and applied definition of what 'synoptic' assessment must achieve in this context if Core Maths qualifications are to meet Ofqual's accreditation requirements.

2 f) External assessment (section 2.7)

We support the emphasis on external assessment and agree that internal assessment should be limited to a maximum of 20%. While this could lead to a degree of variation in models adopted by awarding organisations, we believe that awarding organisations could work together to ensure reliability and consistency of standards across any difference in models.

2 g) Grading (section 2.8)

We agree that these qualifications should be graded, but we would strongly recommend a single common grading scale is applied. Outcomes must be clear and comparable for end-users, or it will be harder to build confidence and value in the qualification. If end users are confused by one awarding organisation having a Pass, Merit, Distinction scale, another having A-C and a third having A*-E they will have no way of knowing the comparative achievements of applicants holding the qualifications. We fear that the response to confusion is likely to be to discount the qualification as having any value.

Our preferred grading system would have a three-point scale, and would be classified as Pass, Merit and Distinction to help distinguish these qualifications from GCSEs (which will have numbers) and GCEs (which will have letter grades).

2 h) Process (section 3)

The broad process is consistent with submissions for other performance table lists, so that is helpful. However the timeline seems unnecessarily challenging. The quality of the qualifications will be directly linked to the amount of time available for development, and while we fully understand the needs of delivery centres in having materials well in advance of first teaching we believe that the greater threat to the success of these qualifications lies in not getting the quality right at the outset.

We therefore strongly recommend that publication of the approved list could safely be held over until spring 2015, giving an extra 3 months for the development and accreditation process. This would allow submission to Ofqual in October rather than August. This need not prevent a managed programme of early adopters / trial cohorts starting in September if each awarding organisation works closely with those centres in a way agreed with Ofqual.

3 Do you have any other comments?

Pearson is working closely with a range of employers and HE academics from a variety of disciplines, as we strongly believe it is important to involve a significant proportion of those who use mathematics in this overall process. Academic mathematicians in HE mathematics departments are not the group of end users being targeted by this qualification – they will continue to recruit from mathematics A level cohorts. It is employers, and academics in geography, psychology, business, biology, chemistry and other – more vocational – departments including medicine, nursing, pharmacy, pharmacology and health and social care who need this qualification to work for them.

We therefore strongly recommend that 'the assessment of qualification content against the requirement' should not be undertaken solely (or even mostly) by 'a panel of mathematics experts convened by DfE.' The assessment should be undertaken by a more representative group of end users who will be better placed to judge whether the content meets their needs.

Despite the statement in section 2.2 of the proposed Technical Guidance, that 'qualifications in the Core Mathematics performance table will not be regulated as a single qualification with specific conditions', we believe that all qualifications identified as 'Core mathematics' qualifications will be seen by end users (and probably by providers) as being part of a group which they can trust to have similar characteristics. It will be very confusing for HEIs, employers, parents, learners and their advisers if there are 'core mathematics' qualifications which differ significantly from each other. Our experience is that as soon as any of these groups are unclear about what a qualification tells them about an individual, they avoid it. This view has been confirmed by the HE and employer stakeholders with whom we are working – they tell us they will not be able to make offers including this qualification if they are not clear what it tells them about an applicant. We risk undermining the successful launch and take-up of these new qualifications if there is any uncertainty. Our comments on matters such as standards and grading are made in this light.