Analysis of Responses to our Consultation on Conditions and Guidance for GCSE Statistics

May 2016

Ofqual/16/5960

Contents

Executive Summary

Our consultation about the Conditions and Guidance for GCSE Statistics took place between 4 February and 6 March 2016.

The consultation questions were available to either complete online or to download. A copy of the consultation is available at https://www.gov.uk/government/consultations/gcse-reform-regulations-for-statistics.

There were seven responses to the consultation – six from organisations, and one individual response.

Respondents were broadly supportive of our proposals. One respondent (an organisation) disagreed with our proposed approach to tolerances for assessment objectives.

Two respondents (both organisations) commented that the weighting of assessment objective AO3 was too high, and could lead to predictable assessments.

One respondent (an organisation) did not comment directly on our proposals, but instead provided general comments on the process for reform of GCSEs, AS and A levels.

Introduction

The consultation on the Conditions and Guidance for GCSE Statistics

This report is a summary of the views expressed by those who responded to our consultation on the Conditions and guidance for GCSE statistics which took place between 4th February 2016 and 6th March 2016.

Background

Reformed GCSE, AS and A level qualifications are being introduced in England. We have consulted on and announced our policy on the general design of reformed qualifications, and on our policy and technical arrangements relating to those subjects that are due to be introduced for first teaching in 2015 and 2016.[1]

Following an earlier consultation, we have also taken decisions on the design of the reformed GCSE statistics.

This consultation focused on more technical matters – that is, on the regulatory arrangements that we must put in place to make sure that awarding organisations design, deliver and award the new GCSE in statistics in line with our policy decisions.

[1] Reformed GCSEs in English language, English literature and mathematics will be taught from September 2015.

1. Who responded?

We received a total of seven responses to our consultation – six from organisations and one from an individual.

Table 1: Breakdown of consultation responses

Personal / organisation response	Respondent type	Number
Personal	General public	1
Organisation	Awarding organisation	2
Organisation	Union	2
Organisation	Subject association or learned society	2

2. Approach to analysis

We published the consultation on our website. Respondents could choose to respond using an online form, by email or by posting their answers to the consultation questions to us. The consultation included 12 questions.

This was a consultation on the views of those who wished to participate and while we tried to ensure that as many respondents as possible had the opportunity to reply, it cannot be considered as a representative sample of the general public or any specific group.

Data presentation

We present the responses to the consultation questions in the order in which they were asked.

The consultation asked 12 questions and each had a different focus. Respondents could choose to answer all or just some of the questions.

For some of the questions, respondents could indicate the extent to which they agreed with our proposals, using a 5-point scale (Strongly agree, Agree, Neither agree nor disagree, Disagree and Strongly disagree), as well as providing free-text narrative comments on our proposals.

For these questions, we set out respondents' views using the 5-point scale. Where respondents provided further comments, we present these separately

During the analysis phase we reviewed every response to each question.

3. Views expressed – consultation response outcomes

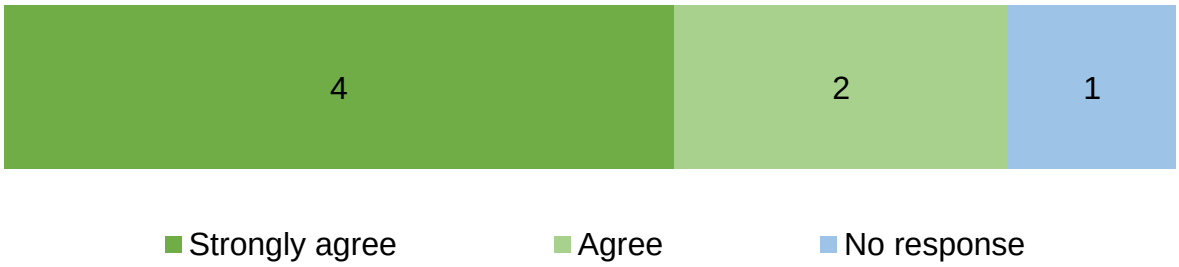
In this section we report the views, in broad terms, of those who responded to the consultation document. We have structured this around the questions covered in the consultation document and provide analysis of the data broken down by stakeholder.

A consultation is not the same as a survey and the responses only reflect the views of those who chose to respond. Typically, responses will come from those with strong views and/or particular experience or interest in a topic. What follows is a fair reflection of the views expressed by respondents to the consultation.

A list of the organisations that responded to the consultation is included in Appendix A.

Question 1 – To what extent do you agree or disagree that we should introduce a Condition which requires exam boards to comply with the relevant subject content and assessment objectives?

Figure 1: Overview of responses to Question 1



Of the six respondents, all agreed or strongly agreed with our proposals.

One respondent (an organisation) commented on changes to subject content, which was outside the scope of this consultation.

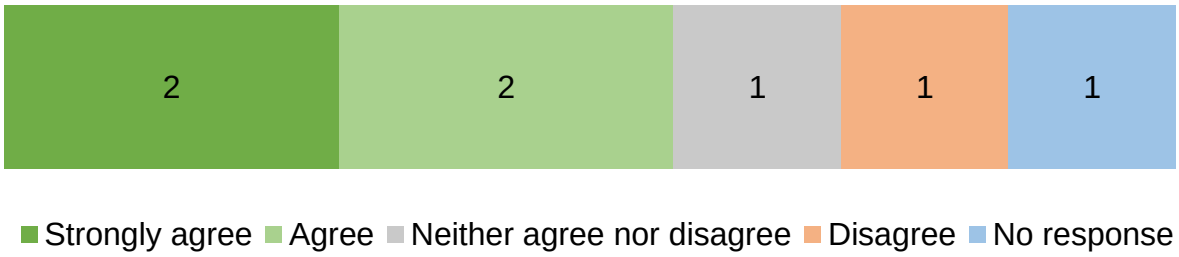
Question 2 – To what extent do you agree or disagree with our proposed approach to tolerances for assessment objective weightings in GCSE statistics?

This question referred to our proposal to allow exam boards limited flexibility to depart from the assessment objective weightings by:

- allowing assessments in any given year to vary each of the assessment objectives by up to ±3 per cent; and

- requiring assessments to (on average) meet the specified weightings over each separate four-year period (years 1 to 4 of awarding, then years 5 to 8, years 9 to 12 and so on) – we have deliberately chosen not to require a 4- year rolling average because this would eliminate all flexibility at the end of year 3.

Figure 2 Overview of responses to Question 2



Six respondents (five organisations and one individual) answered this question.

Of the four respondents who agreed or strongly agreed, two respondents (both organisations) welcomed our proposed tolerance, noting that it would allow good question design.

Two respondents (both organisations) commented that our proposal to require assessments to (on average) meet the specified weightings over separate four-year periods would lead to an inconsistency in approaches to weightings in some years, thereby disadvantaging those cohorts of students;

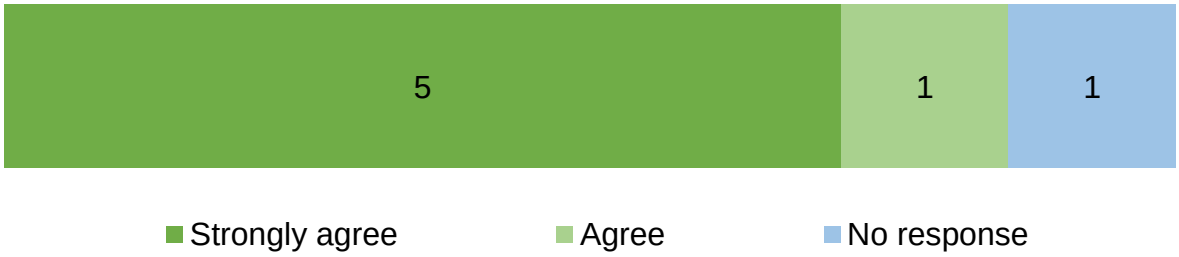
"We do not disagree with the principle of allowing flexibility in weightings annually as for maths and science, but think that the mechanism of meeting this 'on average' across a four year period is far from ideal, as it is complex and will not have consistent implications each year. There will be no flexibility in the last year of the specified period, and very little flexibility in the penultimate year, as exam boards seek to resolve their average score. Leaving the rule as the first bullet point (allowing weighting of assessments in any given year to vary by up to ±3 per cent) seems more appropriate as the implications for each year would be consistent." Respondent 1

"…it would seem more sensible, and fairer, that the tolerance is ±2% in any year, with the awarding organisation explaining its approach to the tolerance in its assessment strategy. This would be in line with the proposed arrangements for AS/A level Mathematics and Further Mathematics." Respondent 2

Question 3 – To what extent do you agree or disagree that we should introduce guidance which clarifies how exam boards should interpret our assessment objectives?

Question three referred to our guidance, which explains how exam boards should interpret our assessment objectives.

Figure 3: Overview of responses to Question 3



Six respondents (five organisations and one individual) answered this question, all agreed or strongly agreed with the proposal.

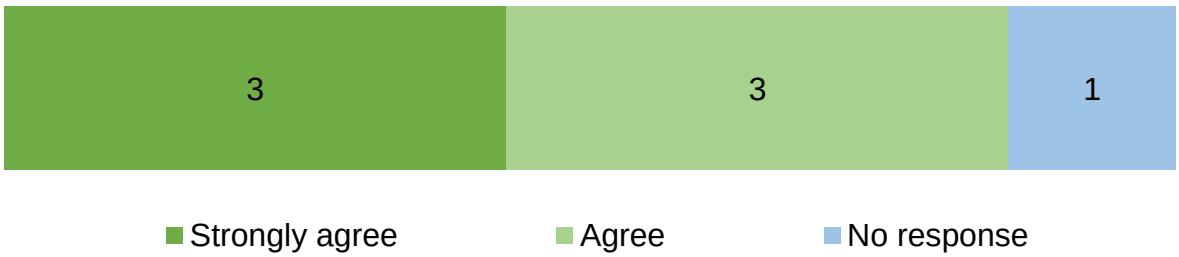
Comments noted the need for awarding organisations to have a shared understanding of what the assessment objectives meant and how they would be implemented in practice.

Question 4 –To what extent do you agree or disagree with our proposed approach to the design of tiered assessments in GCSE statistics?

We have already confirmed that new GCSEs in statistics will be tiered. The focus of this question was the detailed rules for tiering in GCSE statistics. This approach:

- uses two overlapping tiers – foundation tier and higher tier;
- targets foundation tier papers at grades 1 to 5; and
- targets higher tier papers at grades 4 to 9 (but also allows students who narrowly miss a grade 4 to be awarded a grade 3, rather than unclassified).

Figure 4: Overview of responses to Question 4



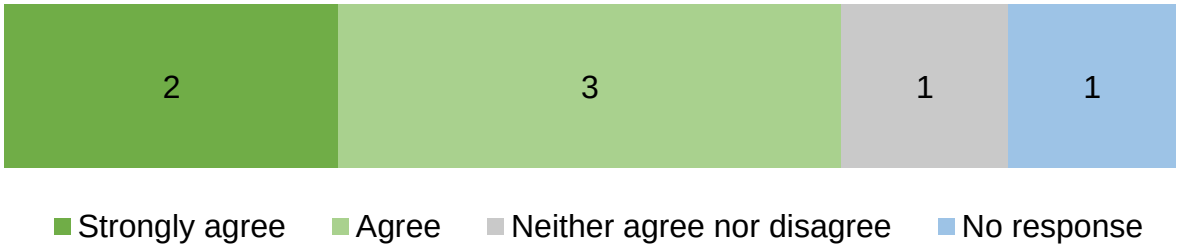
Six respondents (five organisations and one individual) answered this question. Three strongly agreed, and three agreed with this question.

Additional comments noted that the tiered approach and the grades that they are targeted at ensure that assessments can be set that will effectively differentiate between students of different abilities and support accurate and consistent setting of grades across the full grade range.

Question 5 − To what extent do you agree or disagree that mixed-tier entry should be prohibited in GCSE statistics?

In all other new GCSEs which use tiering, we have set rules which prevent students taking a mixture of foundation tier and higher tier papers. Instead, students must either take only foundation tier papers, or only higher tier papers. For the reasons laid out in the consultation document, we proposed the same approach for GCSE statistics.

Figure 5: Overview of responses to Question 5



Six respondents answered this question, two strongly agreed (both organisations), three agreed (two organisations and one individual), and one (organisation) neither agreed not disagreed.

Two respondents commented that the reasons for precluding mixed-tier entry outweighed any potential benefits, and the use of a UMS-style approach to cater for mixed-tier entry, created more problems than benefits.

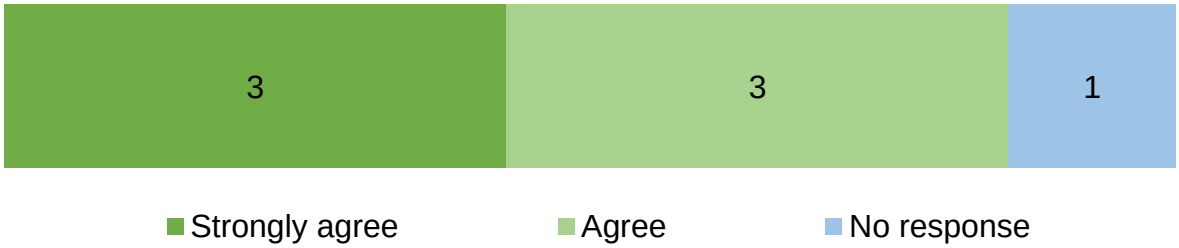
The respondent who neither agreed nor disagreed commented that awarding organisations might develop an assessment structure that makes mixed-tier entry desirable and sensible, and so it should not be ruled out without seeing what is proposed.

Question 6 − To what extent do you agree or disagree with our proposed approach to assessing the full grade range in GCSE statistics?

In subjects with untiered assessments, our rules explicitly require assessments to allow students to access the full grade range. Question 6 was about our proposed

subject-specific Condition to disapply this requirement for new GCSEs in statistics to allow tiering.

Figure 6 Overview of responses to Question 6



Of the six respondents who answered this question, three agreed (all organisations), and three strongly agreed (two organisations and one individual) with the proposal. One respondent commented;

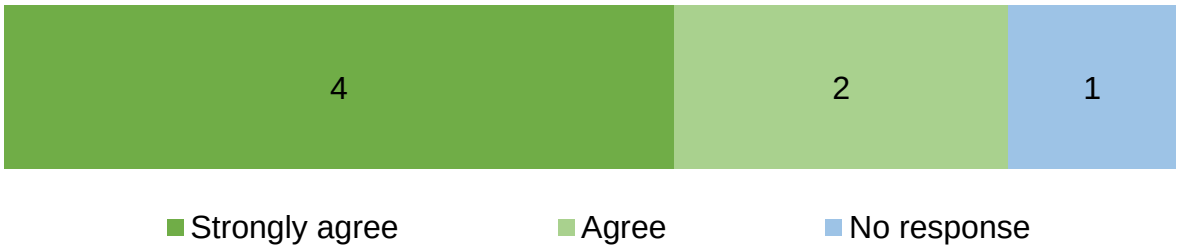
"We do not agree, however, that assessments should 'allow [exam boards] to rank students according to their abilities'. (Para 2.23). This is an unnecessary and unachievable burden on the exam system, particularly with tiered examinations. It is sufficient that 'accurate and consistent setting of grades' is achieved."

Question 7 − To what extent do you agree or disagree with our proposed approach to securing comparability across tiers in GCSE statistics?

Our proposed approach to tiering in GCSE statistics means that grades 4 and 5 will be available at both foundation and higher tier.

In order to make sure that all students awarded a grade 4 or 5 have demonstrated comparable knowledge, skills and understanding – regardless of whether they took foundation tier or higher tier papers - we proposed a similar approach to other new GCSEs with tiering. This is to introduce a broad, purposive obligation which requires exam boards to take all reasonable steps to ensure that grades 4 and 5 are comparable across tiers.

Figure 7 Overview of Responses to Question 7



Of the six respondents who answered this question, four strongly agreed (three organisations, and one individual), and two agreed (both organisations) with our proposal.

Question 8 − Do you have any comments on our proposed Conditions and requirements for GCSE statistics?

Three respondents (all organisations), made further comments on our proposed Conditions and requirements.

One respondent commented that the subject content required practical investigation, but this was not sufficiently supported by our proposed Conditions and guidance. The respondent commented that the ways that the assessments will address the requirements of practical work (as described in the Statistics GCSE subject content)[2] are not clearly specified across the conditions, requirements and guidance. The respondent noted that coursework remains required and weighted in other reformed GCSEs, including Computer Science (20% of marks), Engineering (40%) and Design and Technology (50%). This same provision has not been made for GCSE statistics, meaning that the practical requirements of the subject need addressing by reference to the assessment objectives and associated guidance. The respondent stressed the importance of students taking part in practical inquiry to a standard that develops their knowledge, understanding and skills. Such experience needs to be well specified, including its relationship to the final assessment. Practical work that collects and uses of realistic data for statistical inquiry is an important dimension of this.

Another respondent (also an organisation) commented that the weighting given to Assessment Objective 3 is too high, and that this weighting may result in too many questions being designed about artificial situations.

The respondent also suggested changes to the wording of our tiering requirements, to enable students to take a different tier in a subsequent examination series.

[2] '*Statistics is a practical subject and specifications must make explicit reference to how the assessment will focus on the underpinning principles of the statistical enquiry cycle, as detailed in Appendix 3, developed through practical investigations completed as part of the programme of study. Specifications should give students the opportunity to understand that different approaches, including the use of technology, may be appropriate at each stage of the statistical enquiry cycle, and that statistical conclusions are developed through an iterative process of retesting and refinement. Specifications should give students the opportunity to develop an understanding of how the subject content is applied in decision making processes used in the world around them by using realistic data taken from authentic contexts in their studies.*' Paragraph 7, page 4, 'Statistics GCSE subject content' published by the Department for Education, (document reference DFE-00041-2016)

Question 9 − Do you have any comments on our proposed guidance for GCSE statistics?

Five respondents (all organisations) commented on our proposed guidance. One respondent's comments were out of scope for this consultation.

One respondent expressed concern that the proposed weighting for AO3 could increase the predictability of assessments over time and limit the breadth of the subject content covered in a particular series;

> '*To achieve the AO3 weighting (and achieve balanced coverage of the specification content) based on the present wording of AO3 and the guidance provided on the strands, we can foresee that many of the marks would have to be incorporated into items assessing processing and interpretation. Given the expected response level at GCSE and the relatively tight focus of the objective, this many marks covering AO3 is likely to result in similar questions being asked each year and within a series. We see this as risking the validity and reliability of the examinations and feel that there is a significant danger that assessments will not realise their intended weightings. We would propose reducing the weighting of AO3 to 15%.*
> *Were this to be done we would suggest that 10% is allocated to AO2 to increase the weighting of this AO to 35%. Given the nature of the content and the level of the qualification it is entirely appropriate that 35% of the marks across each suite of assessments should be used to show students abilities in interpreting statistical information and reasoning statistically to draw conclusion across both tiers. Although we believe this to be the appropriate weighting for these assessment objectives across the qualification an adjustment of the weighting to 30% for AO2 and 20% for AO3 would have some impact in addressing the concerns we have raised above.'*

Another respondent commented that the Assessment Objectives have been designed to split up the statistical enquiry cycle, and there appears to be no requirement to assess the statistical enquiry cycle as a whole. The respondent expressed concern that the guidance for AS/A level Mathematics contains statements which would require exam boards to set questions that reflect the entire problem solving cycle. The respondent strongly recommended that we issue similar guidance relating to the statistical enquiry cycle for GCSE Statistics.

Two respondents (both organisations) pointed out typographical errors and omissions in our proposals.

Equality impact assessment

Question 10 − We have not identified any ways in which the proposals for GCSE statistics would impact (positively or negatively) on persons who share a protected characteristic. Are there any potential impacts we have not identified?

Five respondents answered this question (one individual and four organisations), all of them answered 'No'.

Question 11 − Are there any additional steps we could take to mitigate any negative impact resulting from these proposals on persons who share a protected characteristic?

One respondent (an organisation) commented that it is necessary to ensure that each candidate with a protected characteristic is treated as an individual.

Question 12 - Do you have any other comments on the impacts of the proposals on students who share a protected characteristic?

Four respondents answered this question (one individual, and three organisations). None of them had further comments to make on the impacts of the proposals on those who share a protected characteristic.

Other issues

One respondent (an organisation) commented on the subject content requirements and suggested changes to the content for GCSE statistics. The Department for Education determined subject content for GCSE statistics in February 2016,[3] following its own consultation process. This issue was out of scope for this consultation.

[3] https://www.gov.uk/government/publications/gcse-statistics

Appendix A: List of organisational consultation respondents

When completing the questionnaire, respondents were asked to indicate whether they were responding as an individual or on behalf of an organisation.

Below we list those organisations that submitted a response to the consultation. We have not included a list of those responding as an individual; however all responses were given equal status in the analysis.

AQA
Association of School and College Lecturers
Mathematics in Education and Industry (MEI)
Pearson
The Royal Statistical Society
Voice

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