

Review of Standards in GCE A level Geography

2001 and 2010



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Executive summary

The Office of Qualifications and Examinations Regulation (Ofqual) undertakes a rolling programme of reviews across high-profile GCSE and GCE A level subjects to monitor whether standards in assessment and student performance are consistent over time.

This report details the findings for GCE A level geography in the years 2001 and 2010. It compares specifications and assessment materials from the five organisations awarding this qualification in the years being reviewed, collecting the views of a number of subject specialists. It also compares student work across awarding organisations from 2010. Student work from 2001 was not available for use in this study. The five awarding organisations are AQA, CCEA, Edexcel, OCR and WJEC.

Findings

Overall, when we compared 2001 and 2010, the subject content had shifted towards human geography and away from physical geography. There was an overall narrowing of subject coverage and fewer opportunities to assess the skills of students. The extent to which this was evident varied between awarding organisations, but all content was found to be sufficiently demanding for qualifications at this level.

The review also found that changes in subject criteria resulted in the geographical content of specifications becoming less scientific and more centred on impacts and issues.

Reviewers judged A2 to be less demanding because of the removal of the coursework element. Coursework - typically a 4,000-word investigation - was an effective way to assess skills by, for example undertaking and reporting on investigative fieldwork. While awarding organisations now assess skills in a variety of ways within the four-unit, external examination structure, reviewers found that they were not as effective at assessing skills as coursework.

Section 1: Introduction

Context

We regularly review qualifications in different years to check that standards are maintained over time.

These reviews inform future developments in qualification and subject criteria and help us to compare standards across awarding organisations. In our reviews, we:

- analyse the nature of the requirements different assessments make on students
- compare the levels of performance required for a particular grade in different assessments
- consider how these two elements relate to each other.

For this review we selected the specifications within GCE A level geography that attracted the most students in the years being reviewed. A detailed breakdown of student-entry numbers and cumulative percentage pass rates for 2010 can be found in [Appendix F](#).

Our immediate predecessor, the Qualifications and Curriculum Authority (QCA), most recently conducted a standards review in GCE A level geography, using materials from 1980 and 2000. The results were published in a report, which is available on our website at www.ofqual.gov.uk/files/6901_a_level_geography.pdf.

Methodology

Standards reviews examine different specifications within a qualification, the associated assessment instruments and samples of student work, by collating and analysing the views of a number of subject specialists. The following sections of this report detail the process of collecting and processing this information. In these reviews, we compare how demanding a specification is against all of the other specifications under review and includes consideration of:

- specification-level factors such as assessment objectives, content and structure
- assessment-level factors such as what content is assessed, the weighting of each component and how the assessments are marked
- student performance-level factors, including how the students responded to the assessments and the grades they received as a result.

How demanding an assessment of a qualification is can be defined in a variety of ways and is linked to the purpose of the qualification. It is related to:

- the amount and type of subject knowledge required to be assimilated
- the complexity or number of processes required of the students, the extent to which the students have to generate responses to questions from their own knowledge, or the extent to which resources are provided
- the level of abstract thinking involved
- the extent to which the students must devise a strategy for responding to the questions.

Provision of assessment materials and student work

Details of our requirements for the provision of assessment materials and student work for review are given in [Appendix A](#), and in summary include:

- the current specification
- all associated question papers
- final mark schemes
- reports from the examiners, and grade boundaries (overall and by unit, and both raw and scaled)
- mark distributions, grade descriptors and assessment grids
- any other information that was routinely supplied to centres
- all the assessment work carried out by a sample of students whose final grade lay at or near the judgemental grade boundaries for the qualification being analysed.

The comparable materials that were collected and retained for the previous review were retrieved from Ofqual's archive.

Full details of the materials supplied by awarding organisations can be found in [Appendix C](#) and [Appendix D](#).

The review team

We contracted 16 experts in GCE A level geography to undertake the review. These reviewers were sourced through:

- a subject-expert recruitment exercise carried out by us in November 2010, advertised via the Times Educational Supplement and our website and newsletter
- nominations made by the regulators in Wales and Northern Ireland
- nominations made by awarding organisations involved in the review
- nominations made by subject associations and other learned organisations invited to participate in the review.

A full list of reviewers can be found in [Appendix I](#).

We contracted a lead reviewer, specification reviewers and script reviewers. (All nominees from awarding organisations and subject associations were script reviewers.)

Analysis of the specifications and assessment materials

The lead reviewer and specification reviewers (specification review team) analysed the awarding organisations' materials using a series of forms, which can be found via the comparability page on our website at www.ofqual.gov.uk/research-and-statistics/research-reports/92-articles/23-comparability .

These analyses are designed to describe how demanding each specification is. Each reviewer analysed a subset of the specifications available, so that there were at least three different views on each specification. The lead reviewer then produced a report which brought together the views of the reviewers on each of the awarding organisations' specifications. The specification review team had the opportunity to discuss the lead reviewer's conclusions at a follow-up meeting. These findings are presented in Section 2 of this report.

Analysis of student performance

To assess student performance, all reviewers were brought together for a two-day meeting to analyse students' scripts (pieces of student work supplied by the awarding organisations). This process is referred to as a script review. The meeting started with a briefing session to make sure that all the reviewers had a common understanding of the methodology and the judgement criteria.

The scripts were organised into packs for consideration during the review. Packs were organised by grade. (Only grade boundaries A/B and E/U were analysed, as grades B, C and D are calculated arithmetically after grade boundary marks for grades A and E have been set during the awarding process carried out by the awarding organisations.)

As far as was possible, given the collection of scripts available, packs contained 12 scripts at the same grade, with at least two scripts from each awarding organisation from 2010 (the remaining two scripts were selected at random).

Reviewers were then asked to rank the 12 scripts in each pack, from best to worst, on a data-entry sheet and to make comments on the scripts as necessary. Each reviewer completed a maximum of 14 sessions over the two-day script review.

During the two-day meeting there were plenary sessions for reviewers to discuss the script review process and the quality of the scripts being analysed.

Data analysis

We use a software package called FACETS to analyse the results from data-entry sheets produced during the script review. FACETS uses a Rasch model (often classified under item response theory) to convert the qualitative ranking decisions made by reviewers into a single list which reflects the probable overall order of the sets of student work, from best to worst.

We use this list, alongside the qualitative comments made during the script review and findings from the specification review, to inform Section 3 of this report.

Section 2: Subject demand in GCE A level geography

Overview

Specification reviewers considered the amount and type of knowledge about geography required by each awarding organisation's specifications. They did this by analysing the specification documents, the reports from examiners and the question papers with associated mark schemes from each of the awarding organisations from 2001 and 2010. Details of the specifications included in the review are given in [Appendix C](#).

The structure of A levels changed twice between 2001 and 2010. Firstly, in 2001 the AS qualification was approximately half of the A level content but examined at the same standard as A level. Students chose to follow an AS course or an A level course in a subject. In 2010 the AS qualification formed the first half of the A level course and was assessed at a level that was halfway between GCSE and A level.

Then new Curriculum 2000 specifications were introduced for first teaching in 2000 (and first certification 2002) with a mandatory six-unit AS/A2 assessment structure (three units at AS and three units at A2). Further changes were made – for first teaching in 2008 with first certification in 2010 – to a four-unit assessment structure with two units at AS and two units at A2. And there were significant changes made between 2001 and 2010 to the subject criteria and assessment objectives for GCE A level geography.

Overall, when comparing 2001 and 2010, the subject content has shifted towards human geography. However, all specifications have provided more opportunities for stretch and challenge at A2 with an increase in long essay tasks. The awarding organisations vary in the extent to which they have narrowed the content and in their effectiveness at assessing fieldwork skills.

There were improvements in the specifications from 2001 to 2010. The 2010 specifications show:

- more internal consistency in terms of style
- more comparability between options and between questions
- clearer inclines of difficulty within question papers and command words
- more accessible question phrasing
- more positive mark schemes with clear level descriptors
- more need for extended writing.

Findings

Assessment objectives

Specifications in 2001 were written to meet subject criteria which set out four assessment objectives. Specifications in 2010 were written to meet subject criteria which set out three assessment objectives with extended descriptions.

QCA subject criteria (1998) for specifications in 2001		
	Description	Weighting
AO1	Show knowledge of the specified content	20–30%
AO2	Show understanding of the specified content	20–30%
AO3	Apply their knowledge and critical understanding to unfamiliar contexts	15–25%
AO4	Select and use a variety of skills and techniques appropriate to geographical investigation	25–35% Minimum 15% synoptic assessment Maximum 30% internal assessment

QCA subject criteria (2006) for specifications in 2010		
	Description	Weighting
AO1	Demonstrate knowledge and understanding of the content, concepts and processes	30–55%
AO2	Analyse, interpret and evaluate geographical information, issues and viewpoints and apply understanding in unfamiliar contexts	20–40%
AO3	Select and use a variety of methods, skills and techniques (including the use of new technologies) to investigate questions and issues, reach conclusions and communicate findings	25–45%

The changes make a direct comparison of weightings difficult but assessments in 2001 and 2010 were judged to be very similar in their overall balance of knowledge, skills and understanding, though reviewers noted that there has been some increase in focus on analysis and evaluation between 2001 and 2010.

Specification content

Between 2001 and 2010 the main emphases of the subject changed. At AS the main changes were from considerations of physical and human geographical “systems” and “management of environments” to “changing environments”. At A2 there was a shift towards “geographical issues”. At the same time, there was a reduction in “process” geography and an increase in the importance of case studies, which resulted in less scientific and more opinion-based reasoning.

In 2001 AS required both breadth and depth of study via a subject core, which included study of a physical environment, a human environment and the interaction between man and the environment at a range of scales. Processes to be covered included, for physical geography, terrestrial, atmospheric and biotic, and for human geography, economic, social, political and cultural. This specificity of breadth was removed from the subject criteria that applied to the 2010 specifications.

In 2010 all the specifications changed in similar ways. For example, four of the five awarding organisations covered hydrological systems and flooding in AS Unit 1. More demanding aspects of physical geography, for example atmospheric systems or ecology, became (in most cases) optional A2 topics or were removed from the specification. So in 2001 the Edexcel AS specification required an understanding of weather processes and systems (depressions and anticyclones), but in 2010 these processes were included as an option within Unit 2 Topic 1 Extreme Weather. Elsewhere, process geography was minimised. For example, in 2010 in Edexcel’s AS Unit 2, students studying coasts would cover only two aspects: “how physical factors create a variety in the range of different coastal environments” and “how coastal areas have development issues”, rather than, as in 2001, focusing on “coasts as dynamic systems”, “coastal erosion and accretion”, “processes operating on landforms” and “how human activities modify landform systems”. But this is reasonable since in 2001 the AS was more academically demanding.

New topics, especially in human geography, were introduced in 2010 (for example, health, conflict and global inequalities) along with new dimensions (for example, sustainability, green issues and cultural diversity), which supported the aims of the subject criteria in encouraging students to understand the everyday “relevance of their geographical studies”.

The number of topics offered varied by specification in both 2001 and 2010. The topics are not all of the same breadth or depth, which makes a direct comparison difficult. For example, Edexcel's topics "unequal spaces" and "rebranding places" in the AS Unit 2 have limited content and could be classified as one topic. By contrast, the single topic of "sustainability" (WJEC Unit 4 2010) requires study of cities, food, water and energy. In general, coverage is narrower in 2010 especially at A2. AQA, in particular, has a narrower overall coverage than in 2001.

The specifications in 2010 set out the generalisations and key ideas which underpin the topics, but these did not always indicate adequately the depth of coverage required. Some specifications in 2010 used less technical vocabulary possibly suggesting less depth. This was most obvious in the OCR specification, which in 2001 included complex terminology relating to the process bases of the subject such as pedogenic processes, thermokarst, pleistocene pluvial, and functional inter-dependence.

Most 2010 specifications specify the inclusion of case studies at both AS and A2, for example in OCR AS Unit 2 "two contrasting rural environments" and in AQA A2 Unit 3 "two case studies of revolving storms". This appears to have encouraged rehearsed, descriptive responses and weak evaluation of broader issues by students.

Generally, reviewers considered that the geographical content of specifications has continued to be "softened", becoming less process based and more centred on impacts and management strategies. This is particularly so in the Edexcel specification. Some specifications, for example AQA, also provided a narrower geographical experience than in 2001 across the A level qualification as a whole.

Schemes of assessment

Between 2001 and 2010, the awarding organisations made no significant changes to the schemes of assessment other than those required by regulatory conditions. Examinations usually included physical and human geography papers, assessing both processes and environments. A personal enquiry made up of fieldwork was also a requirement. In each specification this personal enquiry unit was assessed by coursework, although AQA and OCR also offered an optional written examination route for the unit. A decision-making, resource-based paper was also part of the structure for Edexcel, CCEA and WJEC.

In 2010 assessment was structured as four units, two assessed at AS and two at A2, and coursework was no longer permitted. Awarding organisations realigned topics to fit the new structure and the new subject criteria. The emphasis in the AS units became "changing physical and human environments", whilst the A2 units focused on "global issues". The assessment of skills (previously examined by coursework) was incorporated in different ways by each of the awarding organisations across the four units.

Options

In 2001 only two awarding organisations, AQA and OCR, offered students a choice in the way they could study certain components: between coursework (geographical fieldwork) and a written examination equivalent assessed against the same marking criteria. In 2010, subject criteria required that the geography GCE A level was assessed by 100 per cent external examination. OCR removed its coursework option. AQA offered two parallel A2 written examination papers, a geography fieldwork investigation and a geographical issue evaluation. Both claim to address the same assessment objectives. However, the geographical issue evaluation paper requires a greater range of analytical, evaluative, synthesis and synoptic skills and the geography fieldwork investigation paper was judged to be similar to the AS skills paper. The two assessments were judged to be of different academic demand and not comparable options.

In 2001 and 2010 all awarding organisations offered options. In each case there was less choice at AS, where core topics had to be covered. More options were available at A2. Each specification required coverage of both physical and human geography topics, though it was possible, in the case of Edexcel and OCR, to follow a largely human or physical option route. Overall the degree of choice in 2010 was very similar to that in 2001 with the exception of the AQA specification, which required a reduced number of topics to be covered, compared with 2001.

By contrast the question choice for students within their chosen subject topic was very limited. In 2010, for example, Edexcel, AQA, WJEC offered no choice of questions within a selected topic at A2.

Awarding organisations achieved appropriate comparability across topics in most cases, though some differences in demand occurred with the use of different resource stimuli. Text-based resources, from which information could be lifted, were often less demanding than data in graphic or tabulated format which required extraction and interpretation. Similarly, photographs were used sometimes with undemanding observational questions which were not necessarily testing geographical knowledge and understanding. Other differences occurred typically between physical and human questions and between options on human geography papers.

Question papers

In both 2001 and 2010 the main assessment tasks were essay questions and structured questions with a resource stimulus. The nature of the tasks, the time allocated to questions and the demand in terms of layout and presentation were broadly similar across all specifications. Reviewers considered that papers were presented more clearly in 2010 than in 2001 and with more accessible language.

A significant change in 2010, for all specifications, was the increase in the total amount of extended writing required. The greatest increase of approximately 25 per cent was in the OCR question papers.

The A2 essay questions were discursive, open-ended, used high-level command words and students were required to discuss, analyse or evaluate in their responses. Wording often included quotations or challenging statements. These essay questions were largely comparable across the awarding organisations in terms of how demanding the subject content, knowledge and understanding were.

There were differences between awarding organisations in both years in terms of the overall academic demand of question papers. Edexcel and CCEA examination papers, overall, had more subdivided questions and, in the case of CCEA, had resource prompts and some structuring or “scaffolding”.

In 2010 each awarding organisation, except CCEA and OCR, provided pre-released information in the form of a resource booklet: AQA as a background to a skills paper; WJEC and Edexcel as background to a synoptic topic. Edexcel also provided a content steer for the long-essay or research task. The detailed wording of the steer reduced the demand of that task. By contrast, the breadth and depth of the AQA resource booklet was considered to provide considerable stretch and challenge because of the range of potential questions and therefore the knowledge, understanding and applied skills required

The question papers of each of the specifications showed progression from AS to A2 with an increase in demand at A2. This was achieved by:

- more open-ended, discursive questions
- questions requiring higher levels of analysis and synthesis of information
- a greater number of higher-level command words
- the use of more complex data and resources.

Based on the wording, resources, command words, topics and mark allocation, the reviewers judged that, of the question papers in 2010, OCR's were the most demanding and CCEA's the least demanding. Both Edexcel and CCEA had proportionally more of the small-tariff questions (those which required shorter responses and with relatively small mark allocations) with lower-level command words at AS. On the other hand, these two specifications were more accessible for the full range of AS students.

Mark schemes

Whilst mark schemes were sound in both 2001 and 2010, in 2010 the schemes were much more consistent in style, more precise and had clearer guidance for examiners. Awarding organisations also developed more detailed generic guidance for the marking of long essays, which students might answer in many different ways. For example, AQA marked against a detailed set of criteria, OCR against the assessment objectives and WJEC against detailed level descriptors.

Coursework

In both 2001 and 2010 the subject criteria required the assessment of fieldwork and enquiry skills. In 2001 the awarding organisations assessed fieldwork via a personal enquiry, usually of 4,000 words. Three awarding organisations, Edexcel, WJEC and CCEA, had internal marking and external moderation of the coursework. AQA and OCR marked coursework externally. AQA and OCR also offered a written paper alternative to the coursework

The subject criteria, which the 2010 specifications were written to meet, did not permit coursework for A level geography. So awarding organisations allocated fieldwork skills and geographical techniques into the four-unit structure. They did this in a variety of ways: AQA assessments included skills papers at both AS and A2; OCR included a skills paper at A2; Edexcel and WJEC included a research assessment based on pre-released material and included the assessment of fieldwork in other units; and CCEA incorporated skills assessment into both AS units with a decision-making, resource-based assessment at A2 and fieldwork requirements in A2/1. Variations between the awarding organisations in the way in which they assessed fieldwork skills and techniques included:

- resource-based questions on physical and human papers
- questions requiring specific techniques
- knowledge and understanding of student's fieldwork experience
- applied fieldwork questions in unfamiliar settings, for example using an Ordnance Survey map
- long topic essays for which research skills are required
- pre-released resource-based analysis or decision-making paper.

Some of these variations raise questions about the demand of the qualification, including:

- weakened demand by predictable questions on the fieldwork process
- repetition of skills questions at AS and A2 with insufficient progression
- impact of complex pre-released materials (either lessening or increasing demand)
- incorrect attribution of assessment objectives for fieldwork questions and therefore inadequate assessment of skills
- incorrect attribution of assessment objectives to resource-based, structured questions on physical and human geography and therefore an imbalance of assessment objectives
- mark schemes which have insufficient regard for evidence of the student's own fieldwork experience.

In AQA and OCR assessments the setting of predictable questions about each stage of the enquiry process can reward well-rehearsed responses. Research assessments with pre-released steers tended to assess knowledge and quality of written communication rather than skills. At the other end of the scale, questions that required the application of fieldwork planning skills in unfamiliar contexts had high levels of demand, as in Edexcel AS Unit 2, AQA A2 Unit 4b and WJEC Unit 3 section B.

The responses by the awarding organisations to changes in the subject criteria resulted in variations in both the demand and the rigour of skills assessment.

Section 3: Standards of performance

Overview

Process

Reviewers considered student work from all the awarding organisations in 2010 only. No student work was available from 2001. Details of the materials used can be found in [Appendix E](#) and a table containing data on student performance can be found in [Appendix F](#).

Interpreting the graphs

The graphs below show the spread of the student work as produced by the FACETS software. The centre point of each indicates the measure related to the relevant ranked script, and the error bar “whiskers” represent the standard error of measurement (SEM) to the corresponding measure. The difference between sequential measures demonstrates the strength of the difference in the ranking position. Large differences would illustrate that scripts were less close in terms of similarity of student performance than small differences. So there could be a larger difference in judged student performance between scripts ranked 1 and 2 than those ranked 2 and 3 (the difference in student performance is not necessarily the same between ranked positions).

The SEM illustrates the level of confidence that the measure is accurate: the greater the SEM, the smaller the confidence levels. Therefore, large whiskers mean that there is less confidence that the measure was accurate. The whiskers illustrate the level of confidence, with upper and lower points at which the measure could lie.

The FACETS software will usually produce a rank order, even when there is little difference between the quality of the student work considered in the review. This is due to the natural slight variability between students who get the same mark. In these cases the rank order would show a relatively even spread of student work from different awarding organisations throughout the rank order.

The scripts have been separated by awarding organisation for ease of reference, represented in alphabetical order across the horizontal axis (but can be found as a continuous inter-awarding organisation list in table format in [Appendix H](#)).

Findings

Only student work from 2010 was available, therefore comparisons of student work over time were not possible for this review. Overall, we found that the findings from the script review corresponded to the findings from the specification review and that,

across grade boundaries, CCEA's students demonstrated lower levels of performance than those studying under other awarding organisations.

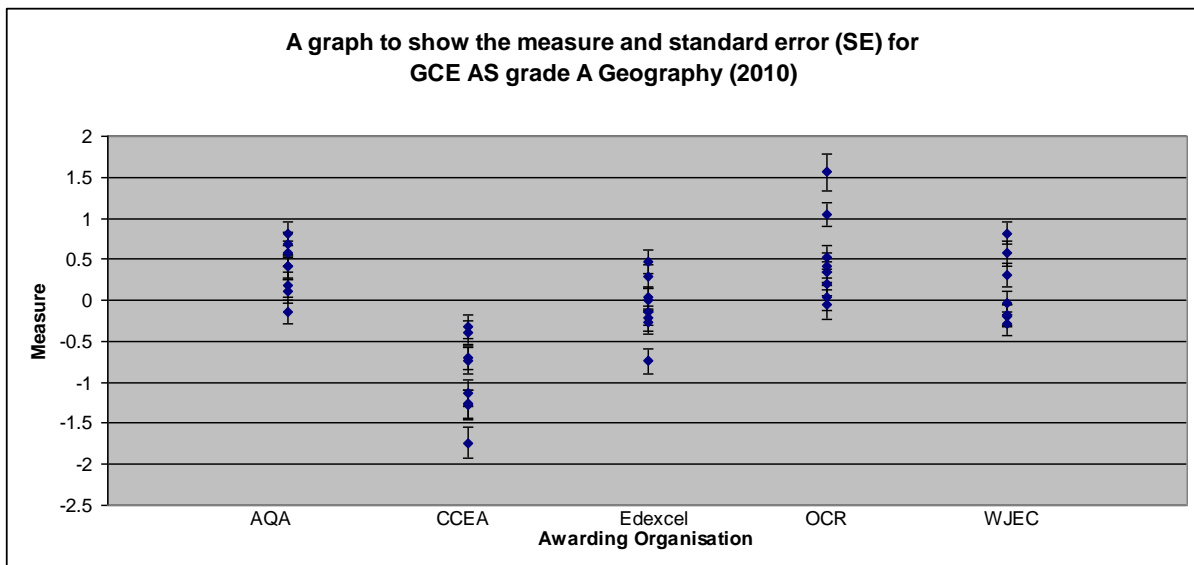
Performance at the GCE AS grade-A boundary in 2010

A high proportion of both AQA and OCR's student work was ranked within the top half of the ranking positions, suggesting a high quality of student work at the grade boundary when compared with the other awarding organisations.

All of CCEA scripts were judged to be in the lower quartile in terms of student performance. This suggests that a low quality of student work at the grade boundary was found for CCEA, when compared with the other four awarding organisations in the review.

Edexcel's student work was ranked fairly evenly throughout the rankings, with the majority ranked within the inter-quartile range (the middle two quartiles), suggesting consistency in the standard of the student work at the grade boundary.

WJEC's student work was fairly evenly distributed throughout the top three quartiles.



Performance at the GCE A2 grade-A boundary in 2010

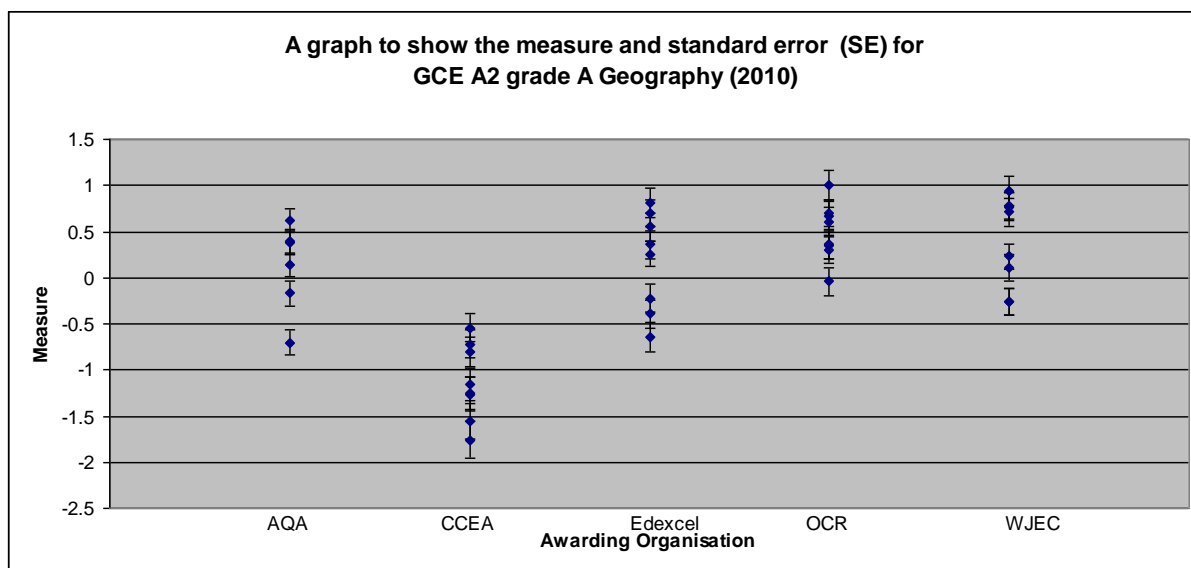
The majority of AQA's scripts were ranked within the inter-quartile range of the ranking positions, suggesting a consistent quality of student work at the grade boundary.

As at AS grade A, all of the CCEA scripts were judged to be in the bottom quartile in terms of student performance. This suggests a low quality of student work at the grade boundary for CCEA, when compared with the other four awarding organisations in the review.

Edexcel's student work was ranked fairly evenly throughout the rankings, suggesting consistency in the standard of the student work at the grade boundary.

As at AS A grade, the majority of OCR's student work was ranked within the top half of the ranking positions, suggesting a high quality of student work at the grade boundary.

WJEC's scripts were evenly split between the first and third quartiles of the ranking positions, with four scripts in each.

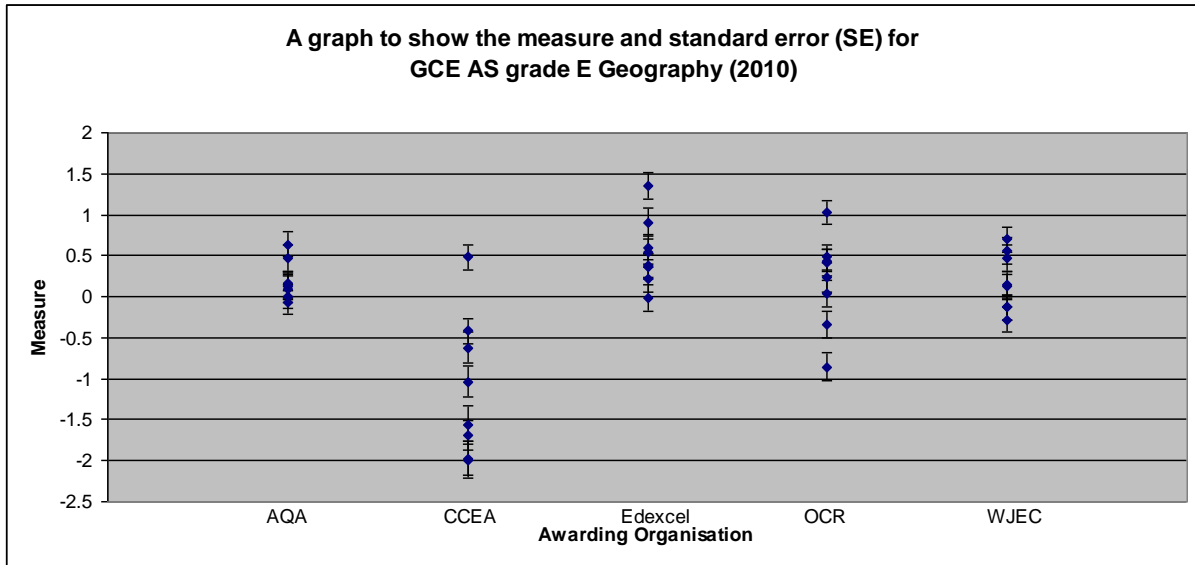


Performance at the GCE AS grade-E boundary in 2010

The majority of AQA's scripts were ranked within the inter-quartile range, suggesting a consistent quality of student work at the grade boundary.

Apart from one script, which was ranked within the top quartile, all of CCEA's scripts were judged to be in the lowest quartile in terms of student performance. This suggests a low quality of student work at the grade boundary when compared with the other four awarding organisations in the review.

OCR's, Edexcel's and WJEC's scripts were fairly evenly distributed throughout the rankings.



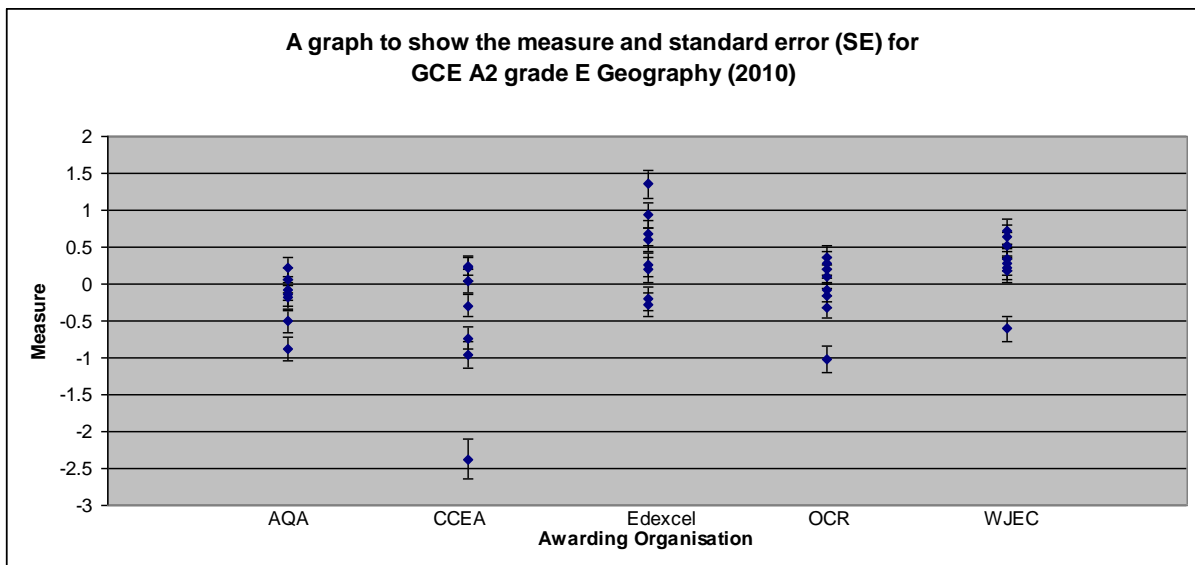
Performance at the GCE A2 grade-E boundary in 2010

Whilst more than half of AQA's scripts were ranked within the inter-quartile range of the ranking positions, almost a third were judged to be in the bottom quartile, skewing the judged student performance towards the bottom end.

CCEA's scripts were fairly evenly distributed throughout the rankings. However, more than half of the scripts were ranked within the bottom quartile.

Edexcel's and WJEC's scripts were fairly evenly distributed throughout the rankings. In both cases half of the scripts were ranked within the top quartile.

The majority of OCR's scripts were ranked within the inter-quartile range with one script in the top and one script in the bottom quartiles.



Conclusions

While all awarding organisations' specifications and the student work reviewed from 2010 indicated that there was an acceptable range of academic demand for qualifications at this level, changes in regulatory criteria brought about between 2001 and 2010 altered the qualifications in significant ways. These changes include the shift in content towards impacts and issues, and the removal of the coursework element.

We are talking to higher education institutions, amongst others, about the content and demand of A levels, so that they meet the needs and expectations of people use this qualification in the future.

Changes to the qualification and their impact on perceptions of the academic demand of the qualification and its suitability as preparation for higher education will inform the next generation of qualification and subject criteria as part of this process.

Specifically related to this review, we recommend that consideration is given to the following:

- Whether the changes to the subject criteria, resulting in the geographical content of specifications becoming less scientific and more centred on impacts and issues, are still appropriate for future A level geography specifications.
- Whether assessing geographical skills through external examinations is sufficient for future A level geography specifications or whether coursework should be reintroduced.

Appendix A: Provision of assessment materials and student work at GCSE and GCE levels for Ofqual's archive (annual inclusion and standards reviews)

Section 1: Specification of requirements

1.1 Each awarding organisation should draw the materials for each subject from the specification with their largest entry in summer 2009, unless that selection severely limits the range of examination components available. Where there are several entry options, materials should be drawn from the largest option only, unless Ofqual were exceptionally to agree other arrangements.

1.2 (With regards to GCSE) where there are both modular and linear (non-modular) examinations in a subject, the awarding organisation operating the modular scheme with the greatest number of students (amongst all awarding organisations) should include that modular scheme, even if it is not a specification within the awarding organisation's largest entry. Similarly, the awarding organisation operating the linear scheme with the greatest number of students should include that linear scheme. If an awarding organisation runs both the largest entry linear examination and the largest entry modular examination in a subject, it will therefore provide two sets of materials, including student work, where required.

1.3 The following materials should be supplied:

- a) Current specification: all associated question papers and final mark schemes.
- b) The relevant report from the examiners and details of awarding procedures particular to the specification supplied.
- c) An indication of how the specification's content and assessment criteria and objectives have been met in each question paper supplied. This may take the form of a grid. For objective tests this should include faculty values, discrimination indices and a specification grid detailing what grade each question was targeted at, as well as an indication of what percentage of students got a particular question correct when it was targeted at the grade they got overall.
- d) Unit or component mark distributions (with grade boundary marks shown). It should be clear whether the marks are on the raw or uniform mark scale.
- e) Grade boundaries, overall and by unit (both raw and scaled).
- f) Student work as specified in Section 2.

g) Complete data record showing for each student selected the raw mark; final mark; weighted or uniform mark; grade for each component/unit (including any non-archived component/unit) and overall grade; and, where relevant, tier of entry.

Where appropriate, materials a)–e) may be supplied in electronic form.

Section 2: Student work

2.1 The work submitted should include the examination scripts, the internal assessment, and any oral/ aural examinations (with examiner mark sheet) where these are routinely recorded. In addition, for modular specifications, the examination papers of module tests should be supplied.

2.2 The sample should be of the original work of the students. Photocopies of work should only be used where it is impossible to send the originals and with agreement in advance by Ofqual. Student and centre names and numbers should be removed wherever they appear in a student's work, unless they form an integral part of the work, for example, within a letter.

2.3 Where an awarding organisation's specification has a relatively small entry or where, for some other reason, it is proving difficult to find sufficient students who fulfil the criteria, the awarding organisation should contact the Ofqual officer responsible to agree how best to finalise the sample.

2.4 All internal assessment submitted should be that of the particular students selected for the sample. If, for any reason, this proves to be impossible, the awarding organisation should contact the Ofqual officer responsible to agree appropriate alternative measures.

2.5 The sample of scripts retained for each specification (option) should be taken from students whose final mark lay at or near the subject grade boundaries for A/B, C/D and F/G for GCSE and A/B and E/U for GCE A level qualifications. At each boundary, each awarding organisation will supply the externally and internally set and marked assessments of fifteen students. Students selected should be those whose performance across units is not obviously and significantly unbalanced.

2.6 In tiered subjects, where the same grade boundary may feature in two tiers, separate sets of student work for the boundary should be provided from each tier.

In addition for AS/A level specifications:

2.7 Where awarding organisations have to supply student work for an A level specification, two samples are required: one for the AS and one for the A2 units.

2.8 For AS level, the work of 15 students whose mark for the AS is at or close to the UMS boundary for an AS grade A (240) or grade E (120) should be supplied.

Students selected should be those whose performance across the three AS units is not obviously or significantly unbalanced. Students should have taken at least two of the three AS units in the June examination series.

2.9 For A level, the sample comprises the A2 work of 15 students who have gained c240 UMS marks at A or c120 UMS marks at E on their A2 units. Students selected should be those whose performance across the three A2 units is not obviously or significantly unbalanced. Students selected will ideally have also gained an overall A level mark which is at or close to the UMS boundary for an overall A level grade A (480) or grade E (240). Students should have taken at least two of the three A2 units in the June examination series.

2.10 The set of AS and A2 units provided should also be a valid combination for A level.

2.11 Where coursework forms a compulsory sub-component within a unit, that coursework should also be collected. Where a unit has optional sub-components, the highest entry option should be supplied. The students chosen for the sample should, as far as possible, have a performance across the components of the unit which is not obviously unbalanced.

Appendix B: Schemes of Assessment

Allocation of content to assessment units 2001 and 2010						
Awarding Organisation	AS - Unit 1	AS - Unit 2	AS - Unit 3	A2 - Unit 1	A2 - Unit 2	A2 - Unit 3
AQA 2001	Physical	Human	<i>Skills</i>	Physical	Human	<i>Skills paper or / PE</i>
AQA 2010	Physical and Human	<i>Skills</i>	N/A	Issues	<i>Skills or Issues Evaluation</i>	N/A
Edexcel 2001	Challenge of Physical	Managing Human	People - environment	Global Futures	<i>Decision making</i>	<i>Personal enquiry</i>
Edexcel 2010	Physical and Human	<i>Investigation/ Skills of Physical and Human</i>	N/A	Global Issues	<i>Research/Skills</i>	N/A
OCR 2001	Physical	Human	<i>Skills paper or PE</i>	Physical	Human	<i>Skills paper or PE</i>
OCR 2010	Changing Physical and <i>skills</i>	Changing Human and <i>skills</i>	N/A	Global Issues	<i>Skills</i>	N/A
CCEA 2001	Physical	Human	Physical	Human	<i>Decision Making</i>	<i>Personal enquiry</i>

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CCEA 2010	Physical and <i>Fieldwork</i>	Human and <i>Skills</i>	N/A	Global issues Human	Physical <i>Decision making</i>	N/A
WJEC 2001	Physical	and Human	Physical Management	Human Topics	<i>Decision making</i>	<i>Personal enquiry</i>
WJEC 2010	Changing Physical and <i>Skills</i>	Changing Human and <i>Skills</i>	N/A	<i>Research Themes</i>	Sustainability themes	N/A

Appendix C: GCE A level specifications reviewed

		Awarding organisation and specification codes				
		AQA	CCEA	Edexcel	OCR	WJEC
Year	2001	5031	S35	8211	9050	N/A
		6031	A35	9211	9425	001599
	2010	1031	S3912	8GEO1	H083	2201
		2031	A3912	9GEO1	H483	3201

Appendix D: GCE A level scripts reviewed

		Awarding organisation				
		AQA	CCEA	Edexcel	OCR	WJEC
	Year	2010	2010	2010	2010	2010
	Grade					
AS	A	*15	*15	*15	*15	*15
	A	**8	**8	**8	**8	**7
	E	*15	*11	*15	*15	*15
	E	**8	**8	**8	**8	**8
A2	A	*15	*15	*15	*15	*15
	A	**6	**8	**8	**8	**8
	E	*15	*11	*15	*15	*15
	E	**7	**7	**8	**7	**8

* Number of student scripts (student work) received from the awarding organisation

** Number of student scripts used in the script review

Appendix E: Availability of specification materials

Materials	2001					2010				
	AQA	CCEA	Edexcel	OCR	WJEC	AQA	CCEA	Edexcel	OCR	WJEC
Specification	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓
Question paper	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓
Mark scheme	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Report from the examiners	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓
Mark distribution	✓	✗	✗	✗	✓	✓	✗	✓	✓	✓
Grade boundaries	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Assessment grids	✗	✗	✗	✗	✗	✓	✓	✗	✓	✓

✓ Material was available and was used in the review

✗ Material was not available so was not able to be used in the review

Appendix F: Student achievement by grade

Cumulative percentage of GCE A level geography grades achieved, 2010

Awarding organisation and year	A*	A	B	C	D	E	U	Total student entries
AQA 2010	6.89%	31.12%	57.75%	80.80%	94.59%	99.04%	100.00%	14,801
CCEA 2010	7%	35.3%	66.4%	87.2%	96.2%	98.6%	100.00%	1681
Edexcel 2010	6.60%	27.20%	55.33%	79.43%	93.04%	98.43%	100.00%	9,354
OCR 2010	7.32%	33.59%	62.14%	82.79%	95.05%	98.79%	100.00%	3,376
WJEC 2010	6.7%	28.5%	55.6%	79.9%	93.9%	98.6%	100.00%	3258

Appendix G: Numbers of data pairs statistically analysed in the script review

Number of data pairs analysed		Number of blank lines	Number of missing/null observations	Number of valid responses used	
Grade	A AS	9492	918	0	8574
	A A2	8318	0	2	8316
	E AS	7656	0	0	7656
	E A2	6732	0	0	6732

Appendix H: Measure, standard error and infit values of the ranked scripts

The 'measure' value represents quality of student performance as judged by the reviewers. It is an estimate of where each script would be ranked if all the scripts were put in order from highest to lowest performance in a single list. Positive values represent the scripts in the top half of all those reviewed.

The SE is the standard error of the estimated measure value. It is likely to be an underestimate as the analysis changed the rankings (as completed by reviewers on the data-entry sheet for each session) into paired comparisons. The table below illustrates this. There are four rank positions. Each rank position is compared against every other position and not just in the order in which they appear.

Reviewer: number 1		Paired comparisons made					
Ranking Position	Script Number	65,23	23,65				
1	65	65,48	48,65	23,48	48,23		
2	23	65,52	52,65	23,52	52,23	48,52	52,48
3	48						
4	52						

Each of the ranked scripts will be paired with each of the other ranked scripts twice for comparison. So, for example, rank 1 will be compared with rank 2 and rank 2 will be compared with rank 1 (hence the paired comparison).

The Infit Z value provides an indication of fit. The higher values indicate that there is more disagreement about the ranking of scripts. For example, scripts that were sometimes ranked above otherwise highly ranked scripts but at other times ranked below lowly ranked scripts (therefore, not consistently positioned within the rankings).

The separation reliability value (infit mean squared) provided is an estimate of the proportion of variance in the script measures attributable to 'true' variance as opposed to 'error' variance. This is likely to be overestimated, as the analysis

changed the rankings into paired comparisons. The separation value, therefore, indicates how spread the group of measures of the scripts is. The higher the separation value, the better, as this indicates more confidence in the degree of separation between the scripts (that is to say that there is more certainty in the discrimination between them, as observed by the reviewers during the ranking exercise). So the order of the scripts (in terms of the quality of student performance) is more reliable for the sample of scripts reviewed. Note that the infit mean squared columns' information will always be a positive number (as it has been squared).

The scripts are listed by student performance, with the highest first.

Geography: GCE grade A at AS				
Measure	SE	Awarding organisation	Infit mean squared	Infit Zstd
1.56	0.22	OCR	0.96	-0.3
1.05	0.14	OCR	1.04	0.6
0.82	0.13	WJEC	0.99	-0.1
0.81	0.15	AQA	1	0
0.68	0.15	AQA	1.03	0.4
0.57	0.15	WJEC	0.96	-0.8
0.57	0.15	AQA	1.03	0.5
0.52	0.14	OCR	0.99	-0.1
0.47	0.14	Edexcel	1.02	0.5
0.42	0.15	OCR	0.96	-0.9
0.41	0.14	AQA	1.05	1.1
0.41	0.15	AQA	1.02	0.3
0.34	0.13	OCR	0.99	-0.2
0.31	0.14	WJEC	0.98	-0.3
0.29	0.15	Edexcel	1.01	0.2

Geography: GCE grade A at A2				
Measure	SE	Awarding organisation	Infit mean squared	Infit Zstd
1.01	0.16	OCR	1.01	0.1
0.94	0.16	WJEC	1.01	0.1
0.81	0.16	Edexcel	1.02	0.3
0.78	0.15	WJEC	0.96	-0.7
0.77	0.15	WJEC	0.98	-0.4
0.71	0.15	WJEC	1.02	0.3
0.7	0.15	OCR	1.01	0.2
0.7	0.15	Edexcel	1.01	0.1
0.67	0.15	OCR	1.03	0.5
0.62	0.13	AQA	1.01	0.2
0.61	0.15	OCR	0.96	-0.6
0.55	0.15	Edexcel	0.96	-0.8
0.39	0.13	AQA	0.98	-0.3
0.38	0.13	AQA	1.01	0.1
0.36	0.15	OCR	1	0

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0.2	0.14	OCR	1.01	0.2
0.19	0.15	AQA	1.06	1.2
0.11	0.14	AQA	1.01	0.1
0.03	0.14	Edexcel	1	0
0.03	0.15	OCR	0.96	-1
0	0.14	Edexcel	1.02	0.4
-0.03	0.14	WJEC	1	0
-0.05	0.18	OCR	0.97	-0.5
-0.14	0.14	AQA	0.97	-0.8
-0.15	0.15	Edexcel	1	0
-0.18	0.13	WJEC	0.95	-1.3
-0.19	0.13	WJEC	1	-0.1
-0.22	0.15	Edexcel	0.94	-1.1
-0.27	0.15	Edexcel	1.01	0.3
-0.29	0.14	WJEC	0.99	-0.2
-0.32	0.14	CCEA	1.04	0.9
-0.39	0.14	CCEA	1.01	0.3
-0.7	0.15	CCEA	0.98	-0.3
-0.73	0.16	CCEA	1.01	0.1
-0.74	0.15	Edexcel	0.96	-0.6
-1.13	0.16	CCEA	1.01	0.1
-1.26	0.17	CCEA	1.01	0.1
-1.27	0.18	CCEA	0.99	0
-1.74	0.19	CCEA	1.04	0.3

0.36	0.15	Edexcel	0.99	-0.2
0.35	0.15	OCR	1.06	1.3
0.3	0.15	OCR	0.97	-0.5
0.26	0.14	Edexcel	1.03	0.7
0.23	0.14	WJEC	0.99	-0.2
0.14	0.13	AQA	0.99	-0.1
0.11	0.15	WJEC	1.04	0.7
-0.04	0.15	OCR	0.94	-1.4
-0.17	0.13	AQA	1	0
-0.22	0.15	Edexcel	0.96	-0.6
-0.26	0.15	WJEC	1.01	0.2
-0.26	0.15	WJEC	0.99	-0.3
-0.39	0.15	Edexcel	1.06	1.2
-0.54	0.15	CCEA	1.02	0.4
-0.64	0.16	Edexcel	0.97	-0.4
-0.7	0.13	AQA	1.08	1.4
-0.72	0.15	CCEA	0.98	-0.2
-0.81	0.16	CCEA	0.99	0
-1.16	0.18	CCEA	0.99	0
-1.25	0.18	CCEA	0.9	-0.9
-1.26	0.18	CCEA	1	0
-1.55	0.19	CCEA	0.99	0
-1.76	0.2	CCEA	1.05	0.4

Geography: GCE grade E at AS				
Measure	SE	Awarding Organisation	Infit Mean Squared	Infit Zstd
1.35	0.16	Edexcel	1.01	0.1
1.03	0.15	OCR	0.98	-0.3
0.91	0.17	Edexcel	0.98	-0.2
0.7	0.15	WJEC	1.02	0.4
0.64	0.15	AQA	1.02	0.5
0.6	0.15	Edexcel	0.98	-0.4
0.56	0.16	WJEC	0.94	-1.1
0.55	0.16	Edexcel	1.04	0.8
0.48	0.15	OCR	0.97	-0.9
0.48	0.15	CCEA	1	0
0.47	0.16	AQA	1.07	1.3
0.47	0.16	WJEC	0.96	-0.8
0.44	0.14	OCR	0.96	-1
0.41	0.16	OCR	1	0
0.38	0.15	Edexcel	1	0
0.37	0.16	Edexcel	0.96	-0.8
0.23	0.18	OCR	0.99	-0.1
0.21	0.15	Edexcel	1.02	0.6

Geography: GCE grade E at A2				
Measure	SE	Awarding Organisation	Infit Mean Squared	Infit Zstd
1.36	0.19	Edexcel	1.03	0.3
0.94	0.17	Edexcel	1.03	0.5
0.72	0.17	WJEC	0.98	-0.2
0.69	0.17	Edexcel	0.97	-0.4
0.65	0.16	WJEC	0.99	-0.1
0.6	0.16	Edexcel	0.98	-0.4
0.53	0.17	WJEC	1.02	0.3
0.36	0.16	OCR	1.02	0.4
0.34	0.16	WJEC	1.03	0.7
0.29	0.16	WJEC	0.96	-1
0.29	0.16	OCR	1.02	0.5
0.27	0.16	Edexcel	0.96	-0.8
0.24	0.12	CCEA	0.99	-0.4
0.23	0.13	AQA	1.04	1.1
0.22	0.16	WJEC	0.94	-1.5
0.22	0.17	CCEA	0.99	-0.1
0.2	0.17	OCR	0.93	-1.3
0.2	0.17	Edexcel	0.97	-0.5

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0.16	0.15	AQA	1.06	1.3
0.15	0.16	WJEC	0.92	-1.7
0.13	0.15	AQA	1.04	1.1
0.13	0.16	AQA	1.04	0.8
0.12	0.15	WJEC	1.02	0.4
0.09	0.16	AQA	1.07	1.6
0.04	0.16	OCR	1.04	0.8
0	0.15	AQA	1.03	0.5
-0.02	0.16	Edexcel	0.89	-2.4
-0.07	0.15	AQA	1.02	0.4
-0.13	0.15	WJEC	0.97	-0.6
-0.13	0.15	WJEC	1.04	1
-0.28	0.15	WJEC	0.93	-1.5
-0.34	0.16	OCR	1.03	0.5
-0.42	0.15	CCEA	0.99	0
-0.62	0.19	CCEA	1.05	0.7
-0.86	0.17	OCR	1.12	1.4
-1.04	0.19	CCEA	1	0
-1.56	0.23	CCEA	1.03	0.2
-1.69	0.18	CCEA	1.05	0.4
-1.97	0.21	CCEA	0.95	-0.3
-1.99	0.22	CCEA	0.88	-0.7

0.19	0.16	WJEC	1	0
0.1	0.16	OCR	1.06	1.5
0.06	0.17	AQA	1.05	1.1
0.05	0.16	CCEA	0.92	-1.8
-0.07	0.14	AQA	1.05	1.4
-0.08	0.16	OCR	1	0
-0.13	0.16	AQA	0.95	-1.2
-0.15	0.16	OCR	1.02	0.5
-0.18	0.16	AQA	1.03	0.7
-0.19	0.16	Edexcel	0.94	-1.4
-0.28	0.16	Edexcel	1.03	0.5
-0.29	0.15	CCEA	0.99	-0.1
-0.31	0.16	OCR	0.95	-0.9
-0.51	0.15	AQA	1.09	1.6
-0.6	0.17	WJEC	0.98	-0.3
-0.73	0.15	CCEA	0.97	-0.4
-0.88	0.16	AQA	1.09	1.2
-0.95	0.18	CCEA	0.98	-0.2
-1.01	0.18	OCR	0.96	-0.4
-2.38	0.27	CCEA	0.99	0

Appendix I: Review team

Review team		Organisation
Lead reviewer	Glennis Copnall	Ofqual reviewer
Specification reviewers	John Vernon	Ofqual reviewer
	David Croot	Ofqual reviewer
	Susan Driver	Ofqual reviewer
Script reviewers	Geraldine Daw	Ofqual reviewer
	Zohra Jenkinson	Ofqual reviewer
	Dorothy Sharpe	Ofqual reviewer
	Keith (Frank) Geary	Ofqual reviewer
	Claire Sladden	Ofqual reviewer
	Jonathan Edwards	AQA
	No reviewer available	CCEA
	Cameron Dunn	Edexcel
	Chris Martin	OCR
	Bob Adcock	WJEC
	David Rogers	Geographical Association
	Janet Bond	DfES (previously DCELLS)

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