Ofqual

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CCEA
Rewarding Learning

Inquiry into the Failure of Part of AQA's GCSE, AS and A level Script-marking Process in the Summer 2010 Examination Series

Final Inquiry Report

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Executive summary

On 30 September 2010 the qualifications regulators for England, Wales and Northern Ireland (Ofqual, DCELLS and the Council for the Curriculum, Examinations and Assessment (CCEA) were informed that incorrect marks had been awarded in a number of AQA's GCSE, AS and A level scripts in the summer 2010 examination series as a result of incomplete marking of those scripts.

Ofqual, working with DCELLS and CCEA, initiated an Inquiry into this failure of part of the AQA marking process to establish what went wrong, the reasons for the failure and what should be done to avoid a recurrence in future years. The Inquiry was also given a remit to assess the effectiveness of the qualifications regulators in relation to their oversight of AQA's A level and GCSE marking.

AQA is regulated by Ofqual and provides assessment for approximately 1.5 million candidates each year.

Since 2005 AQA has increasingly used technology to support the marking process. In the summer 2010 examination series approximately half of the scripts - involving 319 components - were marked onscreen. The onscreen marking system involves scanning candidates' scripts and segmenting individual responses so that that they can be marked separately. AQA has for some time used onscreen marking for components with constrained answers. Constrained answers are where the candidate's response area is clearly defined. Constrained questions are commonly used in combined question/answer booklets. Following pilots conducted in 2009 and January 2010, AQA introduced for the summer 2010 examination series onscreen marking of unconstrained answers. This is where the candidate normally writes their response in a separate generic answer booklet, where the response area for each question is not pre-defined. Approximately 270,000 scripts across 54 components were marked using this process. To facilitate the electronic segmentation of candidates' responses, AQA also introduced a new question numbering system and answer book format for all components that used a separate answer book.

A failure in AQA's onscreen marking process to ensure that all creditworthy material in candidates' scripts was marked before results were published meant that 3353 candidates from 1335 centres in England, Wales and Northern Ireland received incorrect marks involving 48 out of the 54 components where onscreen marking of unconstrained answers in separate answer booklets was used. This in turn resulted in 622 incorrect qualification grades being issued to candidates, of which 146 were GCE A levels.

The failure came to light after AQA received queries from centres that had requested access to a candidate's script, either to determine whether to make an Enquiry about results (EAR) or to see the remarked script following an EAR. When the centres saw

the whole script they could see that some elements of the candidate's response had not been marked and they reported this to AQA.

The failure was due to a combination of factors which include:

- the process for dealing with the variety of ways in which candidates recorded their answers
- the process for fixing the segmented images of the candidate's response before they are released to examiners for marking
- the role and training of examiners in the onscreen marking process
- the selection of components for onscreen marking of unconstrained answers in separate answer booklets.

Other factors which contributed to the failure include:

- limitations of the pilot exercises carried out in 2009 and January 2010
- inadequate user acceptance testing
- the absence of appropriate project and risk management arrangements.

AQA first identified there was a possibility of a systemic problem with the onscreen marking of components that used separate answer booklets through the Enquiries about Results (EARs) process on 17 September 2010. This was approximately one month after A level results were published. AQA may have identified the failure earlier if more effective risk assessment and arrangements for handling and reporting problems concerning the onscreen marking of scripts had been in place.

Issues which affected AQA's ability to identify the failure earlier included:

- the process for re-marking scripts. This process mirrored that used for the original marking, with examiners only seeing answers to individual questions rather the whole scripts. This meant that unmarked material was not visible to examiners who were re-marking scripts
- instances of unmarked material were identified in July at the awarding meetings of some of the qualifications which included components with separate answer booklets which had been marked onscreen. However, these were treated as isolated incidents and were not formally escalated or monitored within AQA

- the priority of the team responsible for processing EARs was monitoring progress to ensure the outcomes of EARs were delivered within the target deadlines specified by the GCSE and GCE Code of Practice

- during the post-results period, reports of possible instances of unmarked material were coming into different parts of AQA (including different offices) which made it difficult to make the connection that the problem affected a wider range of components than first thought.

AQA initiated a systematic four stage process for identifying the scripts that were at risk of containing unmarked material. This process was completed as quickly as could reasonably be expected in view of the fact that 36,133 'at risk' scripts had to be visually scrutinised and 5,200 scripts were sent to examiners for review.

There can be confidence that all of the scripts at risk of containing unmarked material were identified. However, there is evidence that in six cases scripts originally identified as being 'at risk', and containing unmarked material, were not identified through the visual check process and were not sent to an examiner for review.

AQA's communication of the failure to centres and candidates, after the grade changes were known, was adequate and effective. Although centres were generally satisfied with how AQA responded to the issue some centres remained concerned about the time it took AQA to identify there had been a failure in the first place, particularly in terms of the impact on students wishing to take up university places.

The focus and resources required for the regulators' monitoring activities is based on an assessment of risk. The use of onscreen marking by AQA, and other awarding organisations, was not assessed as being a particular risk for the summer 2010 exams. This assessment may have been different if AQA had informed Ofqual of its plans to roll out onscreen marking of separate answer booklets and introduce a new question numbering system and answer booklet.

AQA was first aware on 17 September 2010 that there was a possibility of a systemic problem which affected a proportion of up to, potentially, 270,000 scripts. AQA waited until 30 September 2010 before notifying the qualification regulators of the failure. AQA indicated that it wanted data on the number of grade changes resulting from the review of 'at risk' scripts, and hence the approximate scale of any failure, before providing the regulators with a factual basis on which to proceed.

The process for reporting incidents to the regulators is largely based on custom and practice. Evidence indicates that it is normal practice for awarding organisations, including AQA, to inform the regulators of incidents as soon as they occur even if the scale and impact of the incident is not fully known. In view of the potential scale of the failure, Ofqual's statutory objective to promote public confidence in regulated

qualifications and the deadline for students wishing to secure a place on a university course, Ofqual could reasonably have expected AQA to have notified it when the failure was first discovered on 17 September 2010.

The delay in notifying the regulators, and notifying UCAS after the clearing process had closed on 20 September 2010, limited the opportunity for these organisations to consider any possible actions that might mitigate the impact of the failure on candidates. However, AQA states that its priority was first to ascertain the scale of the failure, and the individual candidates affected, in order for the appropriate practical support to be provided for those candidates.

This report makes a number of recommendations on measures AQA should take to ensure that similar failures do not happen again. The report also includes recommendations to be taken forward by the qualifications regulators.

Background

On 17 September 2010 AQA became aware, through the Enquires about Results (EAR) process and access to scripts service, of a possible systemic problem with the marking of 54 components. All these components had been electronically marked onscreen and included unconstrained answers which candidates had written in separate answer booklets. The EAR process had identified a number of instances where candidates' scripts contained material which had not been marked.

Between 17 and 24 September AQA worked with DRS, its technology provider, to identify the extent of the problem and the number of 'at risk' scripts. By 24 September AQA had identified 5,200 scripts which contained material which had not been marked but may have been creditworthy. These scripts were sent to examiners over the weekend of 25/26 September for review and marking. During the week beginning 27 September it first became apparent to AQA that some mark changes would result in changes to subject grades.

AQA informed Ofqual on 30 September that it had identified a systemic problem with the onscreen marking of 54 components. AQA began communicating with centres affected by the problem on 4 October, with all centres being contacted by 7 October.

Extent of the failure

The incomplete marking of scripts resulted in 3353 mark changes and 622 changes to qualification grades changes, involving 1335 centres across England, Wales and Northern Ireland. The breakdown of qualification grade changes is as follows:

- GCSE 187
- GCE AS 289
- GCE A level 146

A summary of the affected qualifications, components, mark changes and grade changes can be found at Annex D.

Terms of reference

On 4 October 2010 Ofqual, working with DCELLS and CCEA, initiated an inquiry into the failure of part of the AQA marking process. The terms of reference required the Inquiry to:

- identify and record what went wrong
- establish the extent of the problem

- identify when and how the failure was discovered
- identify when, how and why the failure occurred
- assess the appropriateness of AQA's response
- assess the effectiveness of the qualification regulators' oversight of AQA's A level and GCSE marking.
- make recommendations on measures to be taken to ensure that similar failures do not recur.

The full terms of reference can be found at Annex A.

Format of the Inquiry

The Inquiry team had an initial meeting with AQA on 22 October 2010, the purpose of which was to receive a background briefing on AQA's organisational structure and the nature of the issue under investigation in order to inform the development of a plan for the conduct of the Inquiry. Informed by this meeting, Ofqual developed a protocol for the conduct of the Inquiry and formulated a preliminary information request.

The approach adopted by the Inquiry team included:

- a briefing on AQA's organisational structure and the key personnel that have responsibility for the delivery and quality assurance of its onscreen marking process, including AQA's technology supplier DRS
- a demonstration of the system AQA uses for the onscreen marking of unconstrained answers in separate answer booklets
- interviews with key AQA and DRS staff
- a review of documentation including: question papers, scripts procedures, quality assurance documentation, risk registers, pilot evaluation reports, data on the number of scripts affected and Enquiries about Results, communications between AQA and its centres and stakeholders
- consideration of AQA's Internal Inquiry report
- telephone interviews with 21 centres who had candidates which had been affected by the failure

- telephone interviews with six examiners who had used the onscreen marking in the summer 2010 examination series for the marking of unconstrained answers in separate answer booklets
- consideration of information from UCAS on the impact on university places.

The Inquiry team visited AQA's offices in Manchester on three occasions between 12 and 25 November 2010, and visited AQA's office in Guildford on 26 November 2010. The Inquiry team also visited DRS at their offices in Milton Keynes on 5 January 2011. The purpose of these visits was to:

- understand the process for the onscreen marking of unconstrained answers in separate answer booklets
- identify the roles and responsibilities of AQA and DRS staff in relation to the development, piloting and implementation of onscreen marking of unconstrained answers
- form an account of the events which led to the failure and how it was detected
- identify the cause of the error and the scale of impact in terms of numbers of candidates and centres affected
- identify the remedial measures AQA put in place once the error was discovered.

The Inquiry team also interviewed key staff from Ofqual, CCEA and DCELLS.

A summary of the documentation reviewed by the Inquiry team can be found at Annex B. Details of the individuals interviewed can be found at Annex C.

Overview of the process for the onscreen marking of unconstrained answers in separate answer booklets

The onscreen marking system used by AQA involves the scanning and segmentation of scripts into clips. Each clip is an image of an area on a script where a candidate has entered his or her response to a question. Examiners, using marking software which is installed on their computers, then access the clips for the items which they are required to mark.

In combined question/answer booklets the space where the candidate is required to write their response is pre-determined. However, where a generic separate answer book is used, and the space where the candidate can write their answer is unconstrained, the onscreen marking system takes account of the information supplied by the candidate, including identifying the start and finish of a question. This is achieved by:

- entering the corresponding two digit question number in the margin of the answer booklet
- leaving a double line space between the end of an answer and the start of the next answer to show where answers start and finish.

Scanning

Once the examination has been completed the centre sends the scripts that will be marked onscreen to DRS for scanning. Completed scripts are scanned in order to provide script images of individual questions which can in turn be uploaded to the electronic marking software and be accessed by examiners for marking.

Question number verification

During scanning, Intelligent Character Recognition (ICR) is used to identify each of the question numbers entered by the candidates and the scanning application uses this information, in conjunction with any spaces between answers (if the candidate has left spaces) to identify where an answer starts and finishes. This enables the script to be segmented into separate 'clips' of answers to particular questions.

In summer 2010 all the scanned question numbers went through a verification process. A three stage verification process is carried out by DRS staff. The purpose of the process is to ensure that the question number has been correctly identified by the ICR. If there is still any doubt about the accurate recognition of a question number after the verification process the script can be escalated to stage 1 of the fixing process as detailed below.

Rubric matching

The next stage is an automated process to check whether the segmented questions correspond to the minimum number of separate responses that are required by the specific rubric – the instructions to candidates on the question paper that state which questions should be answered - for the component. Providing there is no discrepancy between the answers and the rubric requirements, the script is released for marking.

A proportion of whole scripts are subject to a visual quality control check by permanent DRS staff prior to release for marking.

The process of 'fixing' scripts before they are released for marking

If the question identification verification process does not resolve uncertainties with respect to question numbering or there is a mismatch between the answers that have been segmented and the rubric requirements, then the script image is sent to a fixing process before it is released to examiners for marking.

The first stage of fixing (Fix 1) is carried out by DRS. At this stage, the entire script is visible to the operator. The operator is presented with a particular clip in that script and is required to make a judgement as to whether the answer has been correctly numbered and segmented.

Where the question paper rubric allows candidates to choose the questions which they can answer, unanswered questions are designated as "Not Attempted" (eg if the rubric requires candidates to answer five out of ten possible questions and the candidate decides to answer questions 1,3,4,6 and 8 then questions 2, 5, 7, 9 and 10 will be shown as not attempted). The operator can confirm or alter this designation.

Scripts containing clips which have been released to marking by Fix 1 form part of the marking pool of scripts and a percentage of these scripts go through a quality control procedure. The percentage of quality control varied depending on the question being processed. In the summer 2010 exam series, once quality control had been assured for a question using a higher percentage, the minimum applied was 10%.

If the Fix 1 operator is uncertain about the segmentation or numbering of a clip, the operator can escalate the clip to the second stage of fixing. Fix 2 is the same process as the Fix but the operator is an experienced permanent member of DRS staff. If there is still any uncertainty, the script can be escalated to the third stage of fixing.

Fix 3 is the same process as Fix 1 and Fix 2 processes, but the operator is a member of the AQA processing team. At this stage, the question paper and rubric requirements are used to aid interpretation prior to releasing the clip for marking.

If a script contains a clip which has been through Fix 2 or Fix 3 the script will not form part of the percentage which goes through the quality control procedure prior to the release of the script for marking. This is on the basis that the check has been encompassed in Fix 2 and 3.

The process of fixing scripts after they have been released for marking

There are certain problems with clips which may only be picked up once the clips have been released to the examiners for marking. Problems include where:

- the candidate responds to a question but fails to number it. The un-numbered question will be designated as being "Not Attempted", with the response for the un-numbered question being included with the clip of the previous numbered question.

- the candidate fails to number correctly the question they have answered. This is most likely to happen when the question paper rubrics allow candidates to choose questions. For example, the candidate attempts question 7 but incorrectly numbers it as question 8. In this scenario question 7 will be designated as "Not attempted" and the response will be presented as a response to question 8.

- the candidate includes additional material for a previously answered question elsewhere in the answer booklet but does not correctly number it.

Examiners are required to identify any problems they see with a clip which is presented to them and flag it to the system administrators. The marking software includes the 'Not Mine' and 'Escalation' functions which are available to examiners for dealing with problematic items.

The 'Not Mine' function

The 'Not Mine' function allows the examiner to use a highlighter tool to highlight the parts of the clip that do not relate to the question that is being marked. Therefore, where the answer to a question has been combined with the answer to the previous question (because it has not been numbered), the examiner can highlight the text and can return it to the fixing process. The fixing process would then seek to assign the correct question number against the highlighted text. The 'Not Mine' function could only be used when text which did not relate to the question being marked by the examiner had been combined with text which did relate to the question being marked.

The 'Escalation' function

Where a question had been incorrectly numbered by the candidate or the question number had been incorrectly read by the ICR, for example 1 is read as a 7, the examiner was required to use the 'Escalation' function to bring the item concerned to the attention of a senior examiner. The senior examiner reviewed the item to identify the nature of the problem, inserted a comment and referred the item to the administrators at AQA for the item to be put back into the fixing process so that the issue could be resolved.

Piloting and implementation of the onscreen marking of unconstrained answers in separate answer booklets

AQA first trialled the use of onscreen marking with combined question and answer booklets in 2005. Since 2005, AQA has progressively increased the number of components and scripts that are marked onscreen. By June 2009 the majority of components which used combined question and answer booklets - 190 components involving approximately 3.2 million scripts – were marked onscreen. In terms of extending the use of onscreen marking technology, AQA's attention turned to the onscreen marking of components which use separate answer booklets.

Separate answer booklets are used for components with one or both of the following characteristics:

- some or all items require long-form answers and the amount of space required for candidate responses varies significantly
- the question paper offers a choice of which questions a candidate may answer.

Pilot activities

The onscreen marking of components with separate answer booklets was first piloted in June 2009. The pilot used seven components: 6 GCE Classical Civilisation components and one GCSE History component. This amounted to approximately 7000 candidates in total. All seven components were administered at AQA's Manchester office. Thirty seven examiners were required to mark the seven components. All examiners attended training sessions; led by senior processing staff who had been involved in development of the system.

In November 2009, AQA conducted a further pilot using the new question numbering system and the new style answer booklet. The components used were GCSE English A Papers 1F and 1H. The pilot involved approximately 125,000 candidates. The scripts were marked conventionally rather than onscreen.

The GCE Classical Civilisation components were marked again using on screen marking in the January 2010 examination, which involved approximately 1000 candidates. All examiners had attended training run by AQA staff prior to using the onscreen marking system in the previous summer series. As planning for resources for summer 2010 needed to take place well before the examinations commenced, this marking took place after the decision had been taken by AQA to extend the use of onscreen marking to 54 components which use separate answer booklets for the summer 2010 examination series.

Question numbering and answer booklet format

The onscreen marking of separate answer booklets relies on candidates correctly identifying what question is being answered. To this end, AQA developed a new question numbering system and a new style of answer booklet.

To facilitate the accurate scanning and segmentation of scripts into clips AQA introduced a new simplified sequential numbering system (ie 1, 2, 3 etc) to replace the existing alphanumeric system ie 1(a) i, 1(a) ii etc. For the GCE Classical Civilisation and GCSE History onscreen marking pilot conducted in June 2009, and the onscreen marking of GCE Classical Civilisation in January 2010, a three digit question numbering system was used. For example candidates were instructed to write question 1 in boxes as 001, using a new style answer booklet which included boxes in the left hand margin for candidates to write the question number.

The November 2009 pilot used a new two-digit numbering system and a new answer booklet. The typeface for the question papers and answer booklets was also changed from largely Times New Roman to Arial. As well as facilitating the scanning and segmentation of scripts, AQA intended that candidates would find the new booklet more modern.

In May 2010, AQA also completed a research exercise to establish whether using a simple sequential question numbering system would have any impact on candidates. The research showed that the type of question numbering system used by candidates had no significant effect on their performance overall.

Implementation

The new question numbering system and answer booklets were rolled out to all components which used separate answer booklets for the June 2010 examination series irrespective of whether they were marked onscreen or conventionally marked.

A communication plan was implemented to inform teachers, exams officers and candidates about the introduction of the new question numbering system and answer book format for the June 2010 examination series. Communications included:

- Guidance notes for candidates
- Guidance notes for teachers
- Examples of the new question papers and answer booklets issued to centres with AQA's Updates in December 2009 and March 2010
- Information posted on AQA's online notice boards and 'Ask AQA' service

- Face to face briefings to Exams Officers provided by Senior Managers and Regional Officers
- Specimen Question Papers and Mark Schemes for all the affected components. For all AS components involved, June 2009 assessment materials were reworked as specimens, including re-numbered Reports on the Exam.

The decision to extend the roll-out of the use of onscreen marking for components with separate answer booklets was taken around November 2009 as a result of discussions between staff in AQA's Curriculum and Assessment and Examination Services divisions regarding the suitability of components for onscreen marking. AQA considered the following criteria when identifying which components should be marked on screen:

- components should be across a range of subjects
- components should be across a range of AQA's offices
- components should ensure that any difficulties could be dealt with across AQA's offices
- there should be a focus on AS rather than A2 components
- the appetite for change from subject teams and senior examiners should be taken into account.

Following consideration of these criteria AQA identified 54 components which used separate answer booklets which were judged as being suitable for onscreen marking in the June 2010 examination series. This involved 921 examiners marking approximately 270,000 scripts. The components identified included the seven components that were in the June 2009 pilot and for the first time 15 components administered from AQA's Guildford office.

AQA offered face to face training to all senior examiners but attendance was not compulsory. Training and guidance for non-senior examiners and senior examiners who did not attend these training sessions was provided in the form of:

- Online training tutorial
- DRS manual e-Marker® CMI+ (v2.2)
- A range of AQA guidance materials available in PDF format via the AQA's examiner extranet.

How the marking failure occurred

Ofqual has identified a number of possible causal factors which resulted in the failure by AQA to ensure all creditworthy material was marked through the onscreen marking process.

The process used to identify question numbers and segment responses

The onscreen marking of components which use separate answer booklets relies on Intelligent Character Recognition (ICR) as one element to identify which question the candidate has answered in order for the question to be correctly segmented ready for marking. For this system to work without any manual intervention it is important that the candidate adheres to the instructions for numbering questions and completing the answer booklet. However, in Summer 2010, DRS staff also checked all question numbers by eye.

It is evident that AQA implemented a comprehensive communication campaign to inform centres and candidates about the changes to the question numbering system and answer booklet format. Furthermore, the outcome from the pilot activities conducted in 2009 and January 2010 indicated that candidates generally understood how to number questions and complete the answer booklets. However, the pilot of the question numbering system and new answer booklets conducted in November 2009 did not involve the scanning and onscreen marking of the scripts as the scripts were marked conventionally. Consequently, AQA was not able to see how the ICR process performed with a larger throughput of scripts.

AQA's expectation was that, in light of the comprehensive communication plan it had put in place, the majority of candidates would adhere to the question paper instructions. This was not always the case, and some candidates ignored the instruction to insert a two-digit question number in the boxes provided in the answer booklet margin but for example:

- used the new numbering system but wrote the digits outside the margin – usually within the area provided for their response
- used their own numbering system (1(i), 1(ii), etc) – either in the margin or in the area provided for their response.

The Instructions to Candidates Section of the answer booklet gives an example of how to write the question number in the two boxes provided in the left hand margin of the answer booklet. The number shown in the example box is shown as **01**, with the number one including the use of a serif - a serif is a short line at the end of the main strokes of a character. The question papers themselves use an Arial font where most

numbers appear without serifs. Some candidates made a special effort to ensure that the two-digit question number was written as legibly as possible and used numbers with serifs, in accordance with the example given in the question paper. The ICR did not recognise all the different numbering styles used by candidates and did not necessarily recognise serifs. This increased the possibility of question numbers being misread by the ICR, e.g. **1** being mis-read as a 2 or a 7. However, all question numbers were checked by eye by DRS staff.

Under the stress of examination conditions, some candidates can make mistakes with the numbering of questions. For example, the candidate may repeat a question number, or where the question paper has options they may write the incorrect number against their response. Mistakes with the numbering of questions were more prevalent among GCSE foundation level candidates.

The guidance documents provided to candidates place a great deal of emphasis on the fact that candidates will not be penalised for completing the new answer booklet incorrectly.

Selection of components

The number of optional questions which can be answered within a question paper, and the variability of the length of the candidate's response to questions, are factors which are taken into account when deciding whether a component should use a combined question and answer booklet or a separate answer booklet. 38 out of 54 components which used separate answer booklets and were marked onscreen included options within the question paper. For some components the question paper rubrics are quite complex. For example, in GCE Law Unit 1 candidates are required to answer three questions: one question from section A (with a choice of 4), one question from section B (from a choice of 4) and a third question from either sections A or B. In GCE Psychology A Unit 4, candidates are required to choose: one topic from section A (from a choice of 3 topics) and answer all the questions on the topic; one topic from section B (from a choice of 3 topics) and all the questions in section C. The topics in sections A and B may comprise one or more separately numbered questions.

The potential for candidates to mis-number questions where there are optional questions increases as the questions answered are not necessarily in sequence. However, beyond the limited pilot activities, the risks of including components with complex rubrics were not fully considered.

The rationale for why particular components used separate answer booklets rather than combined question paper/answer booklets is not clear. For example, GCSE Religious Studies B units used separate answer booklets whereas GCSE History Unit 1 used a combined question paper/answer booklet despite the components

being similar in terms of the size of entry and the inclusion of options. Of the 3353 mark changes made as a result of the incomplete marking of scripts, 1209 were attributable to the GCSE Religious Studies B units. This problem would not have occurred if a combined question paper/answer booklet was used.

The issue of whether certain components really needed to use separate answer booklets for unconstrained answers does not appear to have been fully considered. Many of the components using separate answer booklets included a high proportion of questions requiring short answers. The volume of exceptions generated would have been reduced if the numbering of answers by candidates themselves had been restricted to components which genuinely required 'unconstrained responses'.

The process of fixing scripts before they are released for marking

The process used for identifying question numbers and segmenting responses where candidates record their response in separate answer booklets is based on the assumption that candidates comply with the question paper and answer booklet instructions. The combination of candidates not strictly following the instructions for numbering questions, and the complexity of the rubrics for some components resulted in a high volume of candidate responses which needed to be assigned a question number before they were released to examiners for marking.

The three stage process for verifying the question number has been correctly identified by the ICR is carried out by DRS. Operators are given clear instructions as to what they are required to do at each stage of the process. In contrast to conventional marking, where the examiner has the benefit of seeing the whole script, one element of the onscreen marking process is the use of ICR to undertake an initial read of digits in isolation without the benefit of context. Consequently, the potential for an incorrect question number to be assigned initially to a candidate's response increased; however in Summer 2010 the process was backed up by the use of the human eye.

The purpose of the 3 stage fixing process is to check whether a clip has been correctly numbered and segmented, and make any adjustments accordingly. Fix 1 one is carried out by temporary staff who are recruited, trained and supervised by DRS staff. Fix 2 was the same process as Fix 1 but it was carried out by permanent DRS staff. Fix 3 was carried out by AQA processing staff.

At Fix 1 and Fix 2 DRS operators took on the task of reviewing and fixing where the candidate had written item numbers outside the margins and where they were confident of their ability to interpret the candidate's intentions. Fix1 and Fix 2 allow the entire script to be viewed but the operator does not have reference to the relevant question paper and rubric requirements. DRS staff are not expected to make educational judgements regarding mis-numbered answers.

AQA indicates that the vast majority of fixing took place at Fix 1. DRS' objective was to ensure that all items were correctly segmented within the required timescales to enable marking to start. AQA indicated that DRS set out to assist AQA by dealing with cases where a candidate had written item numbers outside the margins or felt they understood the candidate's intentions rather than referring the cases to Fix 3.

DRS state that the number of exceptions being dealt with through the fixing process was not higher than expected. DRS acknowledge that operators may have made some incorrect judgements but they worked on the basis that examiners had a responsibility for identifying any keying or fixing errors, including mis-numbered items or incorrectly segmented clips, using the 'Not Mine and 'Escalation' functions.

There was insufficient monitoring of the volume of exceptions that were being dealt with at each stage of the ICR verification and Fixing processes. Baseline data on the anticipated volume of exceptions at each stage was not established and AQA had not asked DRS to provide metrics relating to the volume of exceptions at each stage of verification and fixing. Consequently, AQA was not aware of the overall volume of exception handling or the stage at which exceptions were being resolved. DRS' focus was on ensuring that images were correctly segmented in accordance with deadlines specified in Service Level Agreements. To this end, DRS ensured that sufficient resources were available to deal with the volume of scripts and handle any peaks.

The lack of visibility regarding the volume of exceptions meant AQA was unable to query with DRS whether judgements made regarding exceptions were being made at the appropriate stage of the ICR verification and Fixing, and identify whether issues with the numbering of questions by candidates required closer scrutiny before results were released. AQA maintains that it would have challenged DRS if it had known that the bulk of exceptions were being handled by DRS.

DRS maintain that all the necessary processes had been put in place to deal with exceptions (such as a candidate inputting the wrong number) and the onscreen marking software had been tested to meet the requirements specified by AQA.

The role and training of examiners

The ICR verification and Fixing processes which are completed before a script is released for marking may not identify, for example:

- where a candidate has mis-numbered a response
- where a candidate has omitted to write a question number which results in the answer to that question being included in the clip for the previous answer; or
- errors which might occur during the fixing process.

The onscreen marking system therefore relies on examiners to identify and return such problems using the 'Not Mine' and 'Escalation' functions. To this end, the examiner plays a critical role in the quality control process. In conventional marking the examiner sees the whole script.

DRS' expectation was that a small proportion of issues would be handled by examiners using the 'Not Mine' and 'Escalation' functions. However, no data on the number of problems being identified by examiners using these functions was captured during the marking period.

The training given to examiners placed insufficient emphasis on the 'Not Mine' and 'Escalation' functions and the critical role they perform in the quality control process. All examiners participating in the pilot exercises in June 2009 and January 2010 received face to face training. In summer 2010, the option of face to face training was available only to senior examiners. Approximately 25% of senior examiners took up this option.

Training sessions were held at AQA's Manchester, Guildford and Harrogate offices, with senior examiners attending the office which was most convenient for them. Staff at AQA's Manchester office had previously delivered the training to examiners for the pilot activities and therefore had more knowledge and experience of the onscreen marking software than staff at AQA's Guildford office, although these staff had been trained.

Examiners who attended the training meetings were briefed about the 'Not Mine' and 'Escalation' processes.

AQA provided an optional online training video for examiners who did not receive face to training. The online training video did not make reference to the 'Not Mine' and 'Escalation' functions or highlight the implications of failing to use these functions.

All examiners also had access to a range of guidance documents which included the DRS manual e-Marker® CMI+ (v 2.2). This is a substantial document and only provides a brief description of the 'Not Mine' and 'Escalation' processes. Similarly, AQA provided a range of guidance documents for examiners via its examiner extranet. A single paragraph refers to the 'Escalation' function and the distinction between the 'Not Mine' and 'Escalation' functions is not explained. The guidance documents were provided as downloadable PDFs. AQA, in its internal inquiry report, reported that examiners found that the PDF documents were not user friendly.

A range of documents about onscreen marking was also available to AQA staff. These documents also failed to describe the 'Not Mine' and 'Escalation' functions.

The 'Not Mine' function is used by examiners to highlight content which does not belong to the item being marked. The highlighted content is then re-routed back into the fixing process.

The 'Escalation' function is used by an examiner to bring a problem with a script to the attention of a senior examiner. This included instances where a question number had been misread through the ICR process or was incorrectly numbered by the candidate. The function is also used for other issues such as offensive material which may have been included by the candidate. The senior examiner in turn identifies the nature of the problem, inserts a comment and refers the item to the system administrators at AQA for re-routing through to fixing.

Although the comments made by examiners could be seen by the system administrators, comments could not be seen by the operators doing the Fixing. Operators undertaking the fixing process did not know why a question had been referred to fixing and whether it had been escalated from the ICR verification process or by examiners via the 'Not Mine and 'Escalation' processes. Consequently, items which had been assigned to the wrong question pool went round the same loop more than once. This was a flaw in the process.

It is also possible for examiners to either forget or ignore the 'Not Mine' and 'Escalation' processes. When a mis-numbered item that had been escalated was recycled some examiners ignored it assuming that it would be dealt with at a later stage.

To collect some indicative views from examiners, Ofqual conducted telephone interviews with six examiners who were involved in the onscreen marking of components using separate answer booklets. The following comments were made:

- senior examiners felt they understood the process for dealing with exceptions but were less confident that their examiners had read the guidance documents and fully understood the process
- the training material was too generic
- not all examiners had to deal with the incorrect numbering of questions or where a candidate's response included a response (or part response) to another question
- when examiners found they were unable to mark a response because the question had been wrongly numbered it was often because the number 1 and 7 looked similar

- problems were experienced when trying to resolve technical issues as the helpline adviser could not access what the examiner was seeing onscreen
- conflicting information was sometimes provided by staff when examiners contacted AQA for advice on how to resolve issues.

Factors which may have contributed to the failure

Ofqual has identified the following factors which may have contributed to the failure.

Pilot activities

The piloting of the onscreen marking of components using separate answer booklets in June 2009 and January 2010 was too limited in order to identify the full range of issues that might emerge when scaling up from the 7,000 scripts across 7 components marked in June 2009 to the 270,000 scripts across 54 components marked in June 2010.

The January 2010 pilot involved the onscreen marking of 6 GCE Classical Civilisation components which had also been included in the June 2009 pilot. The pilot was small and only involved the marking of 1000 scripts. All the examiners had been trained and had experience of using the onscreen marking system from the June 2009 pilot. The January 2010 pilot was conducted after AQA had made the decision to extend the roll out of onscreen marking of components using separate answer booklets. The pilot was primarily intended to test the end to end process before the onscreen marking software was released for the summer 2010 series examinations. The nature and scale of this pilot were unlikely to identify any significant issues.

The approach adopted for the pilots did not exactly mirror that which was used for the summer 2010 examinations. For example, all the 37 examiners who marked the 7 components piloted in June 2009 attended training sessions at AQA's Manchester office. The training sessions were led by senior AQA processing staff who had been involved in the development of the system. Training included demonstrations of all aspects of the onscreen marking system including the 'Not Mine' and 'Escalation' functions and the distinction between these functions. In contrast, for the summer 2010 examination series training was only offered to senior examiners on a non compulsory basis and take up was low.

Candidates involved in the pilot generally followed the numbering and answer booklet instructions. This meant the volume of exceptions going through the ICR verification and fixing processes was manageable.

In November 2009, AQA trialled the use of the new simplified sequential question numbering system and answer booklet format which was a prerequisite for the scanning and electronic segmentation of questions. AQA also conducted a number of research activities and investigated the impact of using different questioning styles. However, these activities were not conducted in the context of onscreen marking. The scripts from the November trial were marked conventionally and therefore did not test any aspects of the onscreen marking process.

User acceptance testing

The onscreen marking software for the June 2010 examinations was released later than expected. Testing was undertaken by IT staff rather than the end users. The testing focussed on the technical functionality of the marking software rather than looking at the whole process which underpinned the onscreen marking of components in separate answer booklets. The absence of a proper user acceptance testing process meant that some of the likely process errors were not picked up before the system was used in a live marking environment.

Project management

AQA uses its own version of Prince 2 as a project management tool and has a dedicated department which provides analysis support to projects. When developing new projects, AQA normally assigns a Project Manager and Business Analyst. The Project Management governance structure identifies a project executive, as well as senior and lead users.

AQA's standard project management methodology was not used for the development and implementation of the onscreen marking of unconstrained answers in separate answer booklets. Onscreen marking of combined question and answer booklets has been used by AQA since 2005 and therefore is seen as being operationally established. The extension of onscreen marking to separate answer booklets was treated as an extension of an existing operational process and not as a new project.

The absence of a standard project methodology and dedicated project management resources meant:

- roles and responsibilities, including the critical relationship between AQA and DRS, were not formalised
- delivery depended on operational staff with conflicting priorities and demands on their time
- there was no formal governance and decision making structure through which the scope and outcomes of the pilot activities could be scrutinised, and key decisions regarding the number of components and scripts involving the roll out could be taken
- there was a lack of rigour around testing. Staff involved were very close to the operation and development of the onscreen marking system and therefore were not best placed to identify scenarios relating to the operation of the whole business process which needed to be tested
- risks were not properly identified and considered.

The absence of a formalised relationship between AQA and DRS in relation to the development and implementation of onscreen marking of separate answer booklets may have contributed to the lack of visibility within AQA regarding the processing of these components and in particular the volume of scripts being dealt with by DRS at each stage of the fixing process.

Risk assessment and management

AQA has systems and processes for recording and monitoring risks. At the corporate level operational risks are recorded in the strategic risk register. Each risk owner produces a progress report which is considered, alongside the strategic risk register, by AQA's Executive Board and Audit Committee three times a year and by AQA's Council once a year.

Each sub-division within AQA holds its own risk log. The Processing and Examining Sub-division (PES) maintains the risk and issues log in relation to the processing of marks which includes onscreen marking. This is reviewed and updated at weekly progress review meetings. AQA's Chief Executive Officer also holds progress meetings during the main examinations processing period (June to August) which provide a venue in which the processing team can report issues which may impact on the smooth delivery of results direct to him.

A risk log was also maintained for the pilot of the onscreen marking of separate answer booklets conducted in June 2009. Risks recorded include:

- centres do not accept the new numbering system and find it confusing
- large number of exceptions to process e.g. inability to identify question numbers, thus slowing down the process
- candidates confused by new numbering system which impacts on performance and standards at awarding.

The risk log for the pilot exercise also included details of possible countermeasures for managing these risks.

Although AQA had mechanisms in place for recording and monitoring risks, the lack of proper project management arrangements for the planning and implementation of onscreen marking of separate answer booklets meant there was not a thorough assessment of the specific risks relating to extending this method of marking to 54 components and 270,000 scripts in the summer 2010 examination series. It is evident from the risk log maintained for the pilot conducted in June 2009 that AQA had considered some of the potential risks associated with onscreen marking of separate answer booklets. However, the risks associated with the roll out of onscreen marking in the summer 2010 examination series was not explicitly mentioned in the

strategic and PES risk registers.

AQA's identification of the marking failure

In July 2010 print-outs of scripts were scrutinised by senior examiners at awarding committee meetings. The primary focus of awarding meetings is to ensure that appropriate standards are maintained for the qualification. Unmarked responses were identified in some scripts at awarding meetings for 8 of the 17 specifications which had affected components. These cases were dealt with on an individual basis. These incidents were not formally escalated or subsequently investigated.

Instances of creditworthy material which did not appear to have been marked were first formally identified by AQA through the Enquiries About Results (EAR) process.

Following the publication of GCE and GCSE results in August 2010, AQA commenced its EAR and Access to Scripts services. There are three EAR services which centres can request – a clerical check, a review of marking (priority and non-priority) and a review of moderation. The GCE and GCSE Code of Practice requires awarding organisations to notify the outcomes of EARs within prescribed deadlines. The deadline for a priority review of marking is 18 days from receipt and 30 days for a non-priority review.

Enquiries About Results are submitted by centres via AQA's secure extranet. The re-marking process replicated the onscreen marking process that is used for prime marking, i.e. examiners use the onscreen marking software to access individual questions to mark.

The Code of Practice also requires awarding organisations to make available on request copies of candidates' marked scripts along with the outcomes of Enquiries About Results. There is another service, priority access to scripts, available for GCE whereby centres and candidates can review a script to decide if it is appropriate to submit an EAR.

For the summer 2010 examination series AQA handled approximately 72,500 EAR requests. AQA also set an internal target to complete priority EAR requests within 10 days rather than the 18 days specified by the Code of Practice.

Senior members of staff from AQA's Candidate Support department met on a weekly basis to monitor the progress of the EAR process. The primary focus of the weekly meetings is to monitor progress of the completion of EARs against internal Key Performance Indicators (KPIs) and the Code of Practice performance measures. The meetings also monitor instances of where there are more than 5% of EARs on a particular component. In addition, the Chief Executive Officer, Chief Operating Officer and Director of Examination Services meet with senior staff from the Candidate Support team on a weekly basis to review progress and provide a forum for escalating issues which may impact on AQA's ability to meet KPIs.

The Inquiry team reviewed the issues logs for all of the weekly Candidate Support progress meetings held in relation to the summer 2010 examinations series. At the first meeting held on 24 August there was an issue logged where the onscreen marking software was presenting the wrong clip to the examiner, e.g. a clip labelled as Q21 was in reality Q26 as the software was not recognising "not attempted" questions. The issues log shows the problem being resolved on 24 August. However, no instances of unmarked material were reported.

No reports of unmarked responses were recorded at the second progress meeting held on 1 September. At the progress meeting held on 7 September it was noted that some unmarked responses had come to light through the Access to Scripts service. Centres that were dissatisfied with the outcome of the original EAR requested to see the candidate's script and found there was unmarked material. Most of the scripts affected were from GCE Classical Civilisation components with some reports from GCE Psychology.

The unmarked material related to responses which had been incorrectly assigned as "not attempted". Consequently, no mark had been awarded at the prime marking stage or at the re-marking stage as the re-marking process mirrored that of prime marking. AQA's initial assessment was that this was similar to the problem identified at the meeting on 24 August. AQA staff agreed to monitor the situation.

On 10 September further cases of unmarked responses in GCE Classical Civilisation scripts were reported at a regular review meeting involving the Director of Examination Services. It was reported that the issue of answers being marked as "not attempted" may be linked to the specific rubrics of the GCE Classical Civilisation components. The decision was taken to stop using the onscreen marking system for re-marking GCE Classical Civilisation. EARs were undertaken using print-outs of whole scripts.

Further incidents of unmarked material were reported at the Candidate Support progress meeting held on 14 September. However, the problem was still considered to be confined to GCE in Classical Civilisation and GCE Psychology at this stage.

On the same day a Principal Examiner for GCE Economics contacted AQA to report that he had concerns that a candidate at his own centre had requested access to the script for a GCE Economics component and this had shown a creditworthy response had been assigned as "not attempted". The Candidate Support team were informed on 15 September.

By the close of business on 15 September the Candidate Support team had established that subject teams for GCE Psychology, Accounting and Law had received correspondence from centres querying the possibility that creditworthy responses had not been marked.

On 16 September the Assistant Director of Processing and the Assistant Director of Centre and Candidate Support, having been informed of the other instances, concluded that potentially a systemic problem had occurred which could have affected all components using separate answer booklets in conjunction with onscreen marking.

The Chief Executive Officer, Chief Operations Officer and Director of Examination Services were informed on 17 September at a scheduled weekly review meeting that more cases of unmarked material had been identified across a range of components but the extent of the problem was not known. At this point AQA took the decision to undertake a process to identify scripts which were at risk of containing unmarked content.

The process of identifying 'at risk' scripts

AQA, working with DRS, initiated a systematic process for identifying the scripts which had potentially been affected. The process comprised four stages.

Stage 1

This stage involved looking at the scripts from the 54 components which used separate answer booklets and had been marked on screen to identify any scripts which did not have the full complement of responses as required by the rubric. This analysis was completed by DRS and AQA carried out a 10-15% quality check of each component to provide assurance that the process was working. The first stage identified 36,133 potentially at risk scripts.

Stage 2

This stage involved visually checking each of the 36,133 scripts onscreen to identify those scripts which may contain questions which had been incorrectly assigned as being "not attempted". The visual check was carried out by DRS staff. AQA also undertook a 10% check against the DRS data. The second stage took 3½ days to complete and identified a sub-set of 6,577 scripts which potentially contained unmarked material.

Stage 3

This stage involved further sifting by AQA staff to remove scripts where an answer was clearly not creditworthy, for example where candidates had simply repeated the question. This reduced the number of affected scripts to 5,200.

Stage 4

The final stage involved sending out print-outs of the affected scripts to senior examiners for review over the weekend of 25-26 September. Examiners were instructed to look for creditworthy material which had not previously been marked and email the new marks back to AQA. This stage resulted in mark changes being applied to 3353 scripts.

AQA replicated its processing system and the dataset containing candidates' original marks. This created a new system on which new marks could be entered and enabled AQA to determine where marks and grades had been changed. AQA received marks back from examiners during the week commencing 27 September.

Subsequent to the completion of the process for identifying 'at risk' scripts, AQA identified an additional six scripts which were found to have unmarked material. In each of these cases the script was originally identified by DRS as being 'at risk' at stage one of the process but the visual check of the script during stage 2 failed to identify the unmarked material.

AQA's response to the marking failure

Communication with centres and candidates

Communication with centres affected by the failure began on Monday 4 October 2010 once the marking, checking and re-grading of affected scripts had been completed.

AQA's communication to the centres affected by the failure included:

- a telephone call to affected centres
- a letter confirming the mark and grade changes
- a letter for centres to issue to individual candidates with grade changes
- extension of the deadline to 22 October for requests for Enquiries About Results and Access to Scripts.

A team of AQA staff, chosen on the basis of seniority, experience and skill set, was convened to make the initial telephone calls to centres. The objective of the call was to alert centres that there had been an issue and they were about to receive a letter explaining who had been affected and how. It was the expectation that the centres would be provided with all of the details on the telephone and that the letter would be immediately e-mailed as confirmation. This was chosen as the preferred option as it also allowed the centres to ask immediate questions. The letter was also sent by post.

A briefing note for the staff making the calls to centres to ensure a consistent message was delivered was prepared. A list of frequently asked questions was also prepared. Calls were prioritised on the basis of impact. For example, a change to an A level award was categorised as higher priority than a change to a unit award. Senior and experienced members of staff contacted those centres who had candidates with A level grade changes. All centres had been contacted by 7 October 2010.

Within the group of staff assigned to call centres, an escalation process was set up to allow centres to be passed to a senior member of staff if they were very concerned and were not content with the answers provided in the first instance. Progress in contacting centres was monitored and managed so that calls were completed as quickly as possible. The number of escalated calls was also monitored and feedback was sought from staff making the calls to identify any additional FAQs. Concerns regarding the impact of the grade changes on university places were handled by the Director of Examination Services.

The letter to centres explained that some material in a small number of scripts had not been fully marked and gave an apology for any distress caused as a result of the original incorrect mark. The letter detailed for each candidate affected the subject result change – this included the original and new grade, the original UMS/mark total and the new UMS/mark total. The letter also outlined changes to unit results, including those that did not lead to a grade change. The letter also explained that if, as a result of the mark changes, a candidate was close to the subject grade boundary then the centre could request an EAR for other units which contributed to the subject award.

AQA's normal policy is only to communicate with centres rather than individual candidates. However, AQA took the decision that where there was a change to a candidate's grade the centre would be provided with a letter to give to the affected candidate.

During the week commencing 4 October AQA handled 889 calls about the issue of revised information, and handled 138 calls in the week commencing 11 October.

AQA issued three public statements on its website between 4 and 7 October 2010. The first statement: explained there had been an issue with some summer series script marking; briefly outlined the extent of the problem in terms of numbers of affected students; outlined what AQA was doing in response and provided a helpline contact number. The second statement confirmed that the EAR deadline had been extended to 22 October 2010 for students affected by the problem. The third statement confirmed that all affected centres had been notified.

Ofqual has reviewed correspondence received by AQA from centres and parents following notification of the mark and grade changes. The correspondence illustrates the concerns centres had regarding the impact of the marking failure on their confidence in the marking process. This included components which had not been affected by the failure. In many cases centres sought reassurance from AQA that all creditworthy responses had been marked, and requested additional EARs to be carried out. Some centres also felt that AQA had not done enough in their communications to explain why the issue had occurred.

The correspondence reviewed indicates AQA took between 3 and 30 days to respond to complaints from centres, with an average response time of 15 days.

To collect some indicative views from centres, Ofqual conducted telephone interviews with a small sample of centres that had been affected by the marking failure. The purpose of the telephone interviews was to establish:

- How the issue was communicated to the centre

- How well centres understood why new grades and marks had been issued by AQA
- Centres' views on the timeliness of AQA's communication
- How satisfied centres were with AQA's response.

Of the 34 centres contacted, 21 agreed to participate.

Most centres were either satisfied or very satisfied with AQA's response to the marking failure. Centres recalled that they had received a telephone call from AQA explaining the problem which was then followed with an explanatory letter which was either e-mailed or faxed. Centres also felt that, on the basis of the communication they had received from AQA, they had a reasonable understanding as to why new marks and grades had been issued. A small number of centres felt that the communication from AQA did not fully explain the cause of the problem or provide sufficient assurance that a similar problem would not occur again in the future.

The timeliness of AQA's communication of the marking failure to centres and candidates was a cause for concern for some centres. The main concern related to the time it took AQA to identify there was a problem; so long after the EAR process had started. There was also particular concern regarding the impact for A level students seeking a university place as the problem was identified after the UCAS clearing and placement process had closed on 20 September 2010.

Communication with UCAS

AQA alerted UCAS on 30 September to the possibility that some students had received incorrect A level grades. Ofqual also notified UCAS as soon as it became aware of the failure. By 7 October details of affected candidates and the new subject grades had been sent to UCAS to enable them to research the status of any candidates who were UCAS applicants. UCAS then informed AQA within four days of the status of those candidates whose university place may have been affected.

UCAS confirms that the majority of UCAS applications were unaffected by the change in grade, with candidates either being accepted by their chosen university or still not meeting the conditions set for their choice. However, 13 UCAS applicants were affected in the following ways:

- 4 applicants were accepted by their insurance choice university but would have met the firm conditions of their first choice with the new grade

- 7 applicants were subsequently placed, for example through clearing or accepted a change of course offer but would have met their original first choice and/or insurance choice conditions with the new grade

- two applicants were unplaced. One would have met their original conditions with the new grade; the other applicant had submitted EARs for other results and would have met their conditions with all of the new grades but not with just the amended AQA grade.

UCAS also confirmed, in response to one applicant who contacted them, that with their new grade the applicant would have been able to enter the process whereby applicants who have exceeded the original conditions set for their university choices can request to change their choices.

AQA indicated that it talked to UCAS about individual cases, and offered to talk to individual universities in order to explain the nature of the problem. However, this offer was not taken up.

Six candidates notified AQA that there was an impact on their university places as a consequence of being issued an incorrect A level grade due to the incomplete marking of their scripts.

New results data was also sent to FORVUS (the organisation responsible for compiling performance tables) and the Diploma Aggregation Service.

Communication with the qualifications regulators

AQA informed Ofqual by telephone of the marking failure on 30 September 2010. This was followed up with a conference call on 1 October which was convened by Ofqual.

AQA's CEO and COO explained that although the potential problem of unmarked responses was identified on 17 September 2010, their judgement was that Ofqual and other key stakeholders (including AQA's Council) should be informed once AQA had established that candidates' grades had been affected by the marking failure. However, this plan was pre-empted when a regional newspaper contacted AQA indicating that it knew about the problem.

More detailed factual information about the marking failure and data on the number of components, candidates, grades and marks affected was provided by AQA's CEO in a letter to Ofqual's Chief Executive dated 8 October 2010. This was part of a formal exchange of information, following a teleconference between AQA and Ofqual senior staff on 1 October, and in response to a letter subsequently sent to AQA by

Ofqual on 4 October 2010.

Effectiveness of the qualifications regulators' oversight of AQA's A level and GCSE marking

Monitoring

The purpose of the regulators' monitoring of the A level and GCSE examination series is to ensure that the qualifications are delivered effectively, that the Code of Practice is followed and that standards are maintained.

The focus and resources required for the regulators' monitoring activities is based on an assessment of risk. Monitoring comprises two main elements. The first is monitoring the standards set by the Awarding Organisations and their compliance with the Code of Practice. The second is monitoring the processing and delivery of examinations to ensure that all scripts are marked on time.

The use of onscreen marking by AQA, or other awarding organisations, was not assessed by the regulators' as being a particular risk for the summer 2010 exams and consequently was not the specific focus of any monitoring activity.

Ofqual's Code of Practice monitoring programme did include a mix of onscreen marked and conventionally marked components across all awarding organisations. The focus of this monitoring was on standards and compliance with the Code of Practice rather than onscreen marking.

When electronic marking was first introduced approximately five years ago, the regulators worked with the awarding organisations at the beginning of the development process to establish the reliability of the electronic marking systems and set indicators against which awarding organisations were monitored.

Ofqual was aware that the extension of electronic marking to the marking of essay-based exams was part of AQA's strategy but had not been informed of AQA's plans to use onscreen marking for unconstrained answers in separate answer booklets in the summer 2010 examination series.

Ofqual observed a number of AQA standardisation and awarding meetings as part of its monitoring programme. This included the award of the A2 Psychology components which had been marked onscreen. No issues concerning unmarked material or AQA's onscreen marking process were reported by the Ofqual observer.

Ofqual also monitors the processing and delivery of examinations. The focus of this monitoring is to ensure awarding organisations have plans and the necessary resources in place to ensure marking is completed on time.

The regulators convene the Exams Process Group (EPG). This group meets nine to ten times a year and comprises representatives from all the awarding organisations

that offer GCSE and GCE qualifications as well as the regulators. The group updates the Joint Systemic Risk Register on issues which could affect the delivery of examinations. Specific issues regarding onscreen marking were not recorded on the risk register or raised by AQA at the EPG meeting held on 15 September 2010.

Awarding organisations provide Ofqual with summary updates on delivery issues during the examination series. AQA does this by inviting Ofqual to attend its weekly progress meetings, which are held by conference call until mid August. No problems regarding onscreen marking were reported by AQA during the main examinations processing period.

Reporting of the failure

Ofqual was first made aware of the problem when the Chief Executive and Director of Standards received separate phone calls from AQA on the evening of 30 September 2010.

Ofqual immediately alerted CCEA and DCELLS to the marking failure via email on 30 September, and followed this up with a phone call on the morning of 1 October.

A teleconference was convened between Ofqual and AQA at 13.00 on 1 October 2010, during which more detail was provided and a number of action points agreed. DCELLS, CCEA, the Department for Education, the Department of Education in Northern Ireland and UCAS were also notified of the problem. DCELLS requested to be present at the teleconference.

Ofqual established as a result of the teleconference that students taking A2 units had been affected which in turn may have affected their ability to take up their preferred university place. In the teleconference AQA confirmed to Ofqual that a regional newspaper had contacted them indicating that they were aware of some issues with marking. It was not clear what detail they had. As it was apparent the issue was in the public domain, the regulators were particularly concerned about the impact the marking failure could have on public confidence. In view of its statutory objective to maintain public confidence, the regulators were of the opinion that the public would expect the regulators to investigate the causes of the failure. Particular lines of communication were agreed between AQA and the regulators.

CCEA and DCELLS indicate that information regarding the number of candidates affected by the failure in Wales and Northern Ireland was not immediately available from AQA.

Ofqual also wrote to the other GCE and GCSE awarding organisations to ask for assurances that candidates taking their examinations could not be affected by the

same marking problem. Ofqual received suitable assurances from the other awarding organisations.

On 4th October 2010, we wrote to inform AQA of the regulators' intention to launch an inquiry into the marking failure, and to request further information about the incident and data on the number of mark and grade changes, and candidates affected across England, Wales and Northern Ireland.

The regulators were first informed by AQA of the problem with unmarked material on 30 September 2010. The regulators were concerned that they had not been informed earlier as AQA was aware there was potentially a systemic problem on 17 September 2010. Ofqual's Chief Executive and Director of Standards felt that the very latest time that the marking problem should have been disclosed to the regulators by AQA was when the scripts were sent to examiners for re-marking on 24 September. At this point it was evident the issue was significant, and there was the potential for the issue to enter the public domain.

The *General Conditions for Recognition on Awarding Organisations – 26 March 2010 state that "Awarding organisations must deal with Ofqual in an open, cooperative way and disclose to Ofqual any information or issues of which Ofqual would reasonably expect to be aware"*. However, there is no formal process setting out how and when awarding organisations should alert the regulators to incidents. Similarly, there are no prescribed arrangements relating to how the regulators should inform each other risks and operational incidents. Therefore to a large extent the process and expectations of the regulators regarding the notification of incidents is based on custom and practice.

It is custom and practice for the regulators to be informed of delivery issues such as the loss of scripts or security breaches involving the disclosure of information regarding live question papers, as soon as they are discovered. Incidents are logged by us on an incident management log, which has an agreed circulation list - this includes relevant staff from CCEA and DCELLS.

It is evident from the incident management log that awarding organisations, including AQA, operate on a 'no surprises' basis and often alert the regulators to relatively minor incidents or issues where there might potentially be a problem but the extent is not known. It is often the case that reported incidents do not materialise into anything significant or are quickly resolved.

Conclusions and Recommendations

The failure in the marking process which resulted in incorrect marks and grades being issued, for components which used separate answer booklets and had been marked onscreen, occurred due to a combination of factors which have been outlined in this report.

The Inquiry terms of reference also required the Inquiry to assess:

- whether the failure could or should have been identified earlier
- the effectiveness of AQA's process once the problem had been identified
- the appropriateness of AQA's response – in particular its communication to centres and candidates
- the effectiveness of the examination regulators in relation to their oversight of AQA's A level and GCSE marking.

The following conclusions are made in relation to these points.

Could or should the failure have been identified earlier?

AQA could have identified the failure earlier if more effective risk assessment and arrangements for handling and reporting problems concerning the onscreen marking of scripts had been in place.

AQA did not properly consider or monitor the risks associated with extending the use of onscreen marking for separate answer booklets, and using a new question numbering system and answer booklet in the context of onscreen marking. Had more effective risk assessment taken place AQA would have been more alert to the potential problems and had the opportunity to put in place suitable contingency arrangements to ensure marks were accurate before publication.

Instances of unmarked responses were identified in a small proportion of scripts at awards meetings for eight out of the 17 specifications affected. However, these cases were dealt with on an individual basis. Consequently, AQA was not aware at this stage there was potentially a problem with the onscreen marking of particular components.

The first indication of any failure was given through the EAR process. However, it took nearly a month after the publication of A level results for AQA to establish there was a systemic problem. AQA's ability to identify the failure earlier in the EAR process was affected by the process for re-marking scripts. This process mirrored that used for the original marking, with examiners only seeing answers to individual

questions rather than whole scripts. This meant that un-marked material was not visible to examiners who were re-marking scripts. Consequently, unmarked responses only came to light after centres had requested access to the candidate's script after they had received the outcome of their initial EAR request.

The priority of the team responsible for processing EARs was monitoring progress to ensure the outcomes of EARs were delivered within the target deadlines specified by the GCSE and GCE Code of Practice. Analysing the outcomes of EARs to identify issues or trends with the marking process was not the prime focus.

Incidents of questions being incorrectly numbered by the onscreen marking software and examples of responses being incorrectly designated as "Not Attempted" were identified earlier in the EAR process. However, these incidents were treated as either technical or isolated instances with solutions put in place to resolve the specific issue.

Reports of possible instances of unmarked material were coming into different parts of AQA (and different offices) eg from examiners direct to staff in subject teams. This affected the time it took AQA to realise there was a problem affecting a wider range of components than first thought.

The lack of proper risk assessment regarding the use of onscreen marking of separate answer booklets meant that AQA staff and examiners were not alert to the possibility that candidates may have incorrectly numbered questions or responses could have been incorrectly designated as being "Not Attempted".

AQA's arrangements for dealing with unexpected issues (eg unmarked responses in print-outs of scripts at awarding meetings) and analysing potential issues identified through the EAR process contributed to length of time it took AQA to identify there was a systemic problem concerning the onscreen marking of separate answer booklets.

How effective was AQA's process once the problem was identified?

The four four-stage process AQA initiated for identifying the scripts that were at risk of containing unmarked material was effective. This process was completed as quickly as could reasonably be expected in view of the fact that 36,133 'at risk' scripts had to be visually scrutinised and 5,200 scripts were sent to examiners for review.

There can be confidence that all of the scripts at risk of containing unmarked material were identified. However, there is evidence that in a very small number of cases scripts originally identified as being 'at risk', and containing unmarked material, were

not identified through the visual check process and were not sent to an examiner for review.

Was AQA's response adequate and effective?

AQA's communication of the failure to centres and candidates once the extent of the grade changes was known was adequate and effective. Although centres were generally satisfied with how AQA responded to the issue some centres remained concerned about the time it had taken AQA to identify there had been a failure in the first place, particularly in terms of the impact on students wishing to take up university places.

AQA worked closely with UCAS to try and help candidates whose university place had been affected. However, AQA's ability to influence matters was affected by the fact that UCAS was informed of the failure after the clearing process for university places had closed on 20 September 2010.

It is also evident from correspondence received by Ofqual that the failure had affected public confidence in the accuracy of marking of qualifications not directly affected by the failure.

How effective was the regulators' monitoring of AQA's A level and GCSE marking?

The arrangements Ofqual had in place to monitor AQA's A level and GCSE examinations in summer 2010 were appropriate. The focus of Ofqual's monitoring is based on the assessment of risk. The use of onscreen marking by AQA, and other awarding organisations, was not seen as a particular risk ahead of the summer 2010 series. On the whole, the roll out of new technology within awarding organisations had greatly reduced errors and delays in the examination process. It is the awarding organisation's responsibility to manage risks associated with the introduction of new processes and technology, and to judge whether increases in risks resulting from the introduction of new processes should be brought to the attention of the regulators.

In view of the General conditions for recognition on awarding organisations, it is not unreasonable for Ofqual to have expected AQA to have alerted it to the piloting and development of onscreen marking of separate answer booklets. This was a significant development as it involved the introduction of new onscreen marking processes, a new question numbering system and new answer booklet format. As Ofqual was not informed, it did not have the opportunity to seek assurances from AQA and, if necessary, put in place appropriate monitoring arrangements.

AQA treated the extension of onscreen marking of separate answer booklets as business as usual. This, combined with the absence of proper project management

and risk assessment arrangements, may have contributed to AQA not informing Ofqual.

Ofqual has a statutory objective to promote public confidence in regulated qualifications. To this end, it needs to be informed of issues which could affect public confidence. The qualifications regulators were concerned that AQA waited until 30 September to notify them of the failure even though it was aware on 17 September 2010 there was the possibility of a systemic problem which potentially affected 270,000 scripts. AQA indicated that it wanted data on the number of grade changes resulting from the review of 'at risk' scripts, and hence the scale of any failure, before providing the regulators with a factual basis on which to proceed.

The General conditions of recognition require awarding organisations to inform Ofqual of issues which it might reasonably expect to be made aware. The process for reporting incidents to the regulators is largely based on custom and practice. Evidence indicates that it is normal practice for awarding organisations, including AQA, to inform the regulators of incidents as soon as they occur even if the scale and impact of the incident is not fully known.

In view of the potential scale of the failure and Ofqual's statutory objective to promote public confidence in regulated qualifications, Ofqual could have reasonably expected AQA to have notified it when the failure was first discovered on 17 September.

The delay in notifying Ofqual, and notifying UCAS after the clearing process had closed on 20 September 2010, prevented these organisations from considering possible actions which could have been taken to help mitigate the impact of the failure on candidates and public confidence more generally.

The following recommendations are intended to ensure that similar failures do not recur.

Recommendations for AQA

AQA should:

1. Review its plans for extending the use of onscreen marking of components with separate answer booklets in future examination series. This should include:

    a. reviewing the suitability of components which use separate answer booklets for onscreen marking. This should include an assessment of the candidature and the complexity of the question paper rubrics to determine the likelihood of the incorrect numbering of answers

   b. reviewing the capacity of AQA and DRS to manage exceptions and ensure additional checks of candidates scripts are carried out before the publication of results

   c. a thorough risk assessment of the plans including identification of appropriate contingencies.

2. Review the benefits and risks of using onscreen marking for all components which use separate answer booklets.

3. Ensure the development and implementation of onscreen marking follows a standard project methodology. This should consider:

   a. governance arrangements – including the change control process

   b. formalising roles and responsibilities – including escalation points within AQA and between AQA and DRS

   c. identification and monitoring of risks – including contingencies

   d. agreeing the management information requirements for the key stages of the process and reporting arrangements between DRS and AQA.

4. Introduce more rigour into its testing processes. Testing should involve end users at an early stage and consider the complete onscreen marking process and not just the onscreen marking software.

5. Ensure the qualifications regulators are promptly notified, in accordance with the expectations set by the regulators, of any incidents that pose a threat to the integrity of the qualifications system.

Question papers and answer booklets

6. Consider using a different combined question paper/answer booklet format which can be used for components which contain both short answer responses and unconstrained responses and eliminates the need for ICR recognition and segmentation.

7. Review the guidance and instructions to candidates regarding the numbering of questions and completing the answer booklet including:

   a. amending the instructions on answer booklets to discourage the use of serifs

   b. using a consistent type face which is compatible with the ICR

c. providing clear and consistent messages about the possible consequences of incorrectly numbering questions.

8. Provide guidance and examples to centres and candidates on common errors that can occur when numbering questions and completing separate answer booklets, and how to avoid them.

ICR verification, fixing and quality control

9. Review, in conjunction with DRS, the fitness for purpose of the process for item number recognition. This should include an evaluation of the benefits and risks of seeing the question number in the context of the script as part of the ICR verification process.

10. Review the fitness for purpose of the three stage fixing process. This should include consideration of the:

    a. purpose and parameters of each stage of the fixing process

    b. resolution of exceptions which require interpretation

    c. sign off by AQA of the instructions provided by DRS to its staff

    d. arrangements for monitoring whether staff are following the fixing process correctly.

11. Identify and document the agreed process for handling all the possible problems that might be encountered during the process of checking scripts before and after they are released for marking.

12. Introduce an additional check of candidates' scripts, after the completion of marking but prior to the publication of results, to establish whether any items have been incorrectly assigned as "Not Attempted".

13. Review the full range of rubric scenarios to establish whether any additional component specific checks are required prior to the publication of results.

The role and training of examiners

14. Develop a single process through which examiners escalate exceptions.

15. Review the appropriateness and accessibility of the training and guidance materials provided to examiners responsible for onscreen marking of separate answer booklets. Where an online tutorial is used as the main training vehicle examiners should be required to confirm they have viewed it before starting marking.

16. Ensure examiner training and materials highlight the critical role examiners play in the quality control process and dealing with exceptions.

17. Monitor examiners' performance in handling exceptions and include this as part of the examiner performance grading process.

18. Ensure those involved in the fixing process can see when a script has been escalated by an examiner, and that their comments are visible.

19. Explore the feasibility of making it impossible for examiners to ignore incorrectly numbered questions or to move to the next clip without having looked at the whole of the current clip.

Detection of problems

20. Establish a process for recording and investigating possible issues that may be identified outside the onscreen marking process such as unmarked responses identified in scripts during awards. The process should include a single point of contact who is responsible for recording, investigating and escalating problems.

21. Review the process and criteria for identifying problems during the EAR process. Consideration should be given to having a dedicated resource responsible for analysing EAR trends.

22. Review the re-marking process so that examiners are required to check a sample of whole scripts to check that all responses have been marked.

Recommendations for the qualifications regulators

The qualifications regulators should:

1. Clarify the process and expectations regarding the notification of incidents by awarding organisations. The following points should be considered:

    a. the general principles for the notification of incidents by awarding organisations. This should include reference, where appropriate, to the regulators' statutory objectives and the regulatory requirements for awarding organisations

    b. contact and escalation points

    c. timescales for the notification of incidents.

2. Review the process for recording, monitoring and escalating incidents to ensure they continue to reflect best practice.

3. Review how risks relating to the introduction of new technology in the assessment process are identified and assessed in order to inform the focus of monitoring activities.

4. Review the arrangements for informing each other of risks and operational incidents.

5. Consider the benefits of running training events involving the awarding organisations and other key stakeholders to share best practice about handling incidents which may have significant impact on public confidence in the qualifications system.

Annex A

Terms of Reference

On September 2010 the examination regulators for England, Wales and Northern Ireland (Ofqual, DCELLS and CCEA) were informed by AQA that incorrect marks had been awarded in a number of AQA GCSE, AS and A-Level scripts in the summer 2010 awarding season as a result of the incomplete marking of those scripts.

This resulted in 615 students in England, Wales and Northern Ireland receiving lower subject grades that they should have done.

Ofqual, working with DCELLS and CCEA, will conduct an Inquiry into this failure of part of the AQA marking process in relation to the summer 2010 GCSE, AS and A Level papers. Gillian Easson, a member of Ofqual's Board, will head the Inquiry.

The Inquiry will look into what went wrong, the reasons for the failure experienced and what should be done to avoid a recurrence in future years.

In particular the Inquiry will:

1. Identify and record precisely what went wrong.
2. Establish the extent of the problem in terms of the number of marks, grades and students affected. This will include verifying the detailed information provided by AQA.
3. Identify when and how the failure was discovered including:
    a. When AQA first became aware of the possibility of a problem, its scale and the impact on students;
    b. Whether the failure could or should have been identified earlier; , and
    c. The effectiveness of AQA's process once the problem had been identified.
4. Identify when, how and why the failure occurred including:
    a. Which processes and practices within AQA may have caused or contributed to the failing; and
    b. Why the failure was not identified earlier.
5. Assess the appropriateness of AQA's response including:

a. The timeliness of AQA's notification to candidates and centres, and the examination regulators of the failure and its impact

b. How the failure was communicated to those affected including candidates, centres, examiners and the public; and

c. Whether the response was adequate and effective.

6. Assess the effectiveness of the examination regulators in relation to their oversight of AQA's A level and GCSE marking.

7. Make recommendations on measures to be taken to ensure that similar failures do not recur.

The Inquiry will consider evidence from AQA and may seek evidence from third parties as appropriate.

The investigation will report to the Ofqual Board on an interim basis by mid December 2010. The timetable for a final report will be agreed at that point.

The investigation report will be published by Ofqual on behalf of the examination regulators along with details of any recommended actions to be taken in response to the Inquiry's report and the response from AQA.

Annex B

Summary of documentation reviewed

Material provided by AQA

1. Process Flow Charts
2. Blank Answer Booklet (8 Pages)
3. GCE Psychology (Specification B) Question Paper (10/06/2010)
4. GCE Accounting (ACCN3) Question Paper (15/06/2010)
5. GCE Psychology Answers (Unmarked Material)
6. GCE Accounting Answers (Fully Marked)
7. Corporate Structure (Diagram)
8. Governance Structure (Diagram)
9. Council: Role, Responsibilities and Accountabilities
10. Council Business Group: Role, Responsibilities and Accountabilities
11. Executive Board: Role, Responsibilities and Accountabilities
12. CMI+ Examiner Monitoring Procedures (August 2010)
13. Letter; CMI+ Sample Marking Exercise (June 2010)
14. Letter; CMI+ Sample Marking Exercise (6A10) (June 2010) Component CIV4D
15. Sample Instructions: Printing Principal Examiner (CMI+ Sample Scripts)
16. AQA Examiners' Standardisation Information
17. Extract from Audit Committee Papers/Minutes (17 September 2009)
18. Strategic Risk Register (Operational) – Extracts
19. Final Risk Log from LFA Pilot
20. Processing and Examining Sub-division (PES) Risk Log (May 2010)
21. e-Marker® Communications Model
22. AQA/DRS Draft Relationship Interfaces (Dated 28/01/2010, but revised)

23. PES Progress Meetings – June 2010 Series (6 August 2010)
24. Progress Meetings – Final Issues for Resolution
25. CS Progress Meetings – June 2010 Series
26. Call Centre Log – "Call Centre Statistics"
27. Flow Chart – Identifying and Processing Scripts with Unmarked Items – Summer 2010
28. DRS Document: In-Line Additional Page Review for AQA (2010)
29. Index – Correspondence and Contact from Centres
30. Bundle of Correspondence (45 Documents in Bundle)
31. AQA Examination of Long Answers – Information for Teachers and Candidates
32. AQA Exam of Long Answers – Information for Students
33. AQA Examination of Long Answers – Important Updates for Exam Officers
34. Script for CMI+ Tutorial
35. Outline for Demonstration of CMI+ (Seeding and Double Marking)
36. Presentation - "Training for Senior Examiners new to CMI+" – Summer 2010
37. AQA – Examiners' Marking Information– Marking Using CMI+
38. DRS – e-Marker® CMI+ Marker Guide
39. AQA Press Release – Summer Series Script Marking Issue (07/10/2010)
40. AQA Press Release – Enquiries About Results (07/10/2010)
41. AQA Press Release – Issue with Some Summer Series Script Marking (07/10/2010)
42. Communication with Centres about Marking Issue
43. Guidance for Staff Telephoning Centres about Grade and Mark Changes
44. Sample AQA Letters to Centres (2 Documents)
45. Email to Council Members – AQA Statement: Marking of GCE (04/10/2010)

46. Extracts from CBG Minutes (02/09/2005 to 24/08/2010)
47. Extracts from Council Minutes (20/04/2004 to 29/09/2010)
48. Extracts from EB Minutes (08/04/2004 to 13/10/2009)
49. Formal and Informal Media Contact during Marking Issue (30/09/2010 to 04/10/2010)
50. Research Document – *Reliability of Onscreen Marking of Essays* (03/06/2010)
51. Research Document – *A Concurrent Approach to Estimating* (09/12/2009)
52. Research Document – *Reliability of Marking Essays Onscreen*
53. Research Document – *Using the Think Aloud Method*
54. Research Document – *Numbering Nested Questions* (03/06/2010)
55. Research Document – *Marking Reliability and Mark Tolerances* (09/12/2009)
56. AQA – Examination of Long Answers Questionnaire
57. AQA – Questionnaire for Exam Officers
58. January 2009 Series – Weekly Figures for EARs (18/05/2009)
59. Extracts from DG and COO Strategy/Operational Reports to Council (13/10/2005 to 29/09/2010)
60. Note – Processes and Procedures for Identifying and Escalating Issues
61. Progress Meeting Agenda (28 July 2010)
62. CEO/COO/Ofqual Progress Briefing – Summer 2010 (28 July 2010)
63. EAR Report to Executive Board Meeting Agenda (07/10/2010)
64. 9th 2010 Meeting of EAR Senior Staff Agenda (19/10/2010)
65. AQA Internal Inquiry report (22/11/2010)
66. AQA news release about Internal Inquiry Report (08/12/2010)
67. AQA Internal Inquiry report (November 2010) as published (08/12/2010)

Material provided by Ofqual

1. Risk Management Register (16/09/2010)

2. Confirmation of Completion of Marking for GCE (09/08/2010)
3. Confirmation of Completion of Marking for GCSE (13/08/2010)
4. AQA Progress Meeting Agenda (04/08/2010)
5. Ofqual Issues spreadsheet (04/08/2010)
6. Notes from EPG meeting (15/09/2010)

Correspondence received by Ofqual in relation to the issue

Annex C

Individuals interviewed by the Inquiry team

AQA

Chief Executive Officer

Chief Operating Officer

Director: Examination Services Division

Assistant Director: Processing (Guildford)

Assistant Director: Processing (Manchester)

Assistant Director: Centre and Candidate Support

Assistant Director: e-processes

Assistant Director: Standards and Quality

Principal Manager: Candidate Support

Principal Manager: Processing and Examination Services

Senior Manager: Standards and Quality

DRS

General Manager–: Education

Director of Electronic Assessment

Ofqual

Chief Executive

Director of Standards

Head of Qualification Standards

Head of Communications

Awarding Bodies Risk & Delivery Programme Leader

CCEA

Accreditation Manager

DCELLS

Head of General Qualifications (Monitoring & Regulation)

Annex D

Summary of components, mark changes and grade changes

GCE A level

Qualification	Component	No. of candidates with mark changes	No. of AS grade changes	No. of A level grade changes
Accounting	ACCN3	16		12
	ACCN4	55		
Citizenship	CIST1	44	7	
Classical Civilisation	CIV1A	9	25	15
	CIV1B	3		
	CIV1C	2		
	CIV1D	3		
	CIV1E	0		
	CIV1F	16		
	CIV2A	11		
	CIV2B	19		
	CIV2C	1		
	CIV2D	0		
	CIV2E	1		
	CIV2F	0		
	CIV3A	0		
	CIV3B	1		
	CIV3C	4		

	CIV3D	0		
	CIV4A	2		
	CIV4B	5		
	CIV4C	18		
	CIV4D	0		
Dance	DANC1	28	13	
Economics	ECON1/2	88	45	7
	ECON2/2	113		
D&T Food	FOOD3	28		2
General Studies A	GENA1/2	112	55	1
	GENA2/2	63		
General Studies B	GENB1	61	18	
Government & Politics	GOVP1	86	25	
Applied Health and Social Care	HC01	18	9	1
	HC04	10		
	HC05	14		
	HC06	11		
	HC12	17		
	HC13	32		
History	HIS1E	2	4	1
	HIS1K	7		
Law	LAW01	177	69	8
	LAW02	202		
Physical Education	PHED3	92		21

Psychology A	PSYA3	63		63
	PSYA4	442		
Psychology B	PSYB2	136	19	15
	PSYB3	18		
	PSYB4	79		

GCSE

Qualification	**Component**	**No. of candidates with mark changes**	**No. of grade changes**
Religious Studies B	40551	63	170
	40552	703	
	40553	227	
	40554	178	
	40555	8	
	40556	30	
History B	3042/3	35	17

Annex E

Glossary

Awarding - the process through which candidates' grades are determined on the basis of the available evidence.

Centre - an organisation (such as a school or college) accountable to an awarding organisation for the assessment arrangements leading to an award.

Clearing – a system used by UCAS towards the end of the academic cycle to enable students to apply for university course vacancies if they have not previously secured a place.

Clip – each clip is an image of an area on a script where a candidate has entered his or her response to a question.

Code of Practice – a document published by the examination regulators which sets out the agreed principles and practices for the assessment and quality assurance of GCE and GCSE examinations.

Combined Question Answer booklets – booklets which combine both the candidate's questions and answers.

Component - a discrete assessable element within a qualification.

Constrained – a script, or item, where the candidate's response area is clearly defined. Constrained items are commonly used in combined question/ answer booklets.

Enquiries about Results (EAR) - a process through which an awarding organisation may be asked to check one or more of the steps leading to a reported result.

Item – questions are referred to as items. Each item or part item is a question.

Mark scheme - a scheme detailing how credit is to be awarded in relation to a particular assessment unit or component. A mark scheme normally characterises acceptable answers to questions/tasks or parts of questions/tasks and identifies the amount of credit each attracts.

Rubric – the instructions to the candidate on the front page of the question paper. It states the number of options and which questions should be answered from each section.

Script – document incorporating candidates' responses. Completed scripts are scanned in order to provide script images (clips) which are uploaded to the onscreen marking system.

Serif - a short line at the end of the main strokes of a character.

Standardisation - a scheme detailing how credit is to be awarded in relation to a particular assessment unit or component. A mark scheme normally characterises acceptable answers to questions/tasks or parts of questions/tasks and identifies the amount of credit each attracts.

Unconstrained - a script, or item, where the candidate's response area cannot and is not predetermined. Most commonly this will mean a generic answer booklet is being used.

Abbreviations

AQA	Assessment and Qualifications Alliance
CCEA	Council for the Curriculum, Examinations and Assessment
CEO	Chief Executive Officer
COO	Chief Operating Officer
DCELLS	Department for Children, Education and Lifelong Learning and Skills (Executive body of the Welsh Assembly Government)
DRS	DRS Data Services Ltd
EARs	Enquiries about Results
ICR	Intelligent Character Recognition
Ofqual	the Office of Qualifications and Examinations Regulation
UCAS	Universities Central Admissions Service

Annex F

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The Inquiry team

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We wish to make our publications widely accessible. Please contact us if you have any specific accessibility requirements.

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