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Llywodraeth Cymru  
Welsh Government



# **Inquiry into Examination Errors Summer 2011**

## **Final Report**

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December 2011

Ofqual/11/5113

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## **Foreword**

This is the regulators' report into the nature and causes of the examination paper errors in the summer 2011 examination season.

We set out how the errors occurred when we published our interim report in October 2011.

In this final report we set out how we went about our inquiry, and what we found at each awarding organisation. We say what we believe to be the root causes of the examination paper errors, and make recommendations for improvement. If the recommendations are followed through, examination paper errors will be less likely in future, and if they do happen, awarding bodies will be able to deal with them better.

We are taking some regulatory action, to reflect our findings. Each awarding organisation needs to make changes to its ways of working but each is different. We expect each awarding organisation to provide a formal undertaking tailored to the changes it needs to make. The detail is set out on the Ofqual website.<sup>1</sup> We are also reviewing the General Conditions of Recognition, with the summer 2012 examination series in mind. Again, details are set out on the Ofqual website.<sup>2</sup>

Finally, we want to develop our own arrangements so that we can regulate such situations better, and we set out what we intend to do.

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<sup>1</sup> [www.ofqual.gov.uk/how-we-regulate/90-articles/831](http://www.ofqual.gov.uk/how-we-regulate/90-articles/831)

<sup>2</sup> [www.ofqual.gov.uk/how-we-regulate/90-articles/831](http://www.ofqual.gov.uk/how-we-regulate/90-articles/831)

## **Executive summary**

### **Introduction**

During the summer 2011 examination season, examination paper errors in a small number of GCSE, GCE AS and A2 papers made it difficult or impossible for candidates to answer some questions.

While examinations were still running, we concentrated on them. Once examinations finished, we oversaw decisions by awarding organisations on the fairest ways of marking the affected papers. We wanted to make sure that as far as possible, candidates were not unfairly advantaged or disadvantaged. We also started our inquiry into how the errors happened.

We published an interim report at the end of October, ahead of the November 2011 examination series. The report gave a factual account of the nature and causes of the errors, and outlined the extra quality assurance checks that awarding organisations had put in place. We set out our early thinking on areas for improvement.

We have found the awarding organisations supportive of the inquiry's aims, cooperative and already working hard to improve examination paper production. There were no errors in the GCSE examinations taken in November, but no one is complacent.

In this final report we outline the examination production process, and then set out (in Appendices 2 to 7) the arrangements in each awarding organisation in a little more detail. We identify features of the process and how the way it works in practice can and did lead to errors. We then set out areas where, in our view, improvements can be made so as to reduce those risks.

We also report on what we have been told by those directly affected by the errors: candidates, schools and colleges. We comment on how the errors were dealt with by schools and colleges, and how well awarding organisations communicated with those affected.

We review and comment on the steps awarding organisations took, as they marked papers, to make sure that as far as possible, candidates were not unfairly advantaged or disadvantaged. Finally, we look again at our regulatory arrangements and set out where we think we need to make changes ourselves.

## **Key risk factors identified by the inquiry**

We found that, on the whole, the awarding organisations' high level processes for producing question papers are essentially sound. They meet the current regulatory requirements. Awarding organisations aim to follow their stated processes, and generally do so, but sometimes individuals in awarding organisations do not always follow these procedures.

We have identified a number of risk factors around the procedures, in practice.

Firstly, there is in our view insufficient focus on the quality and detail of question papers early enough in the process. This means in turn that there is a tendency to make changes to papers later on in the process.

Secondly, question paper production is a complex and lengthy business. The lead time itself (as much as 18 months) is a risk factor. It is not unusual for minor adjustments to be made to a paper several times during that period.

Thirdly, there are what one might call "pinch points" in the process, and they need to be managed effectively. For some awarding organisations we found responsibility for managing the end-to-end process was insufficiently defined, and this creates risk. In AQA, CCEA and ICAEE we found a lack of clarity about the exact role, responsibility and accountability of some individuals involved in the process.

In each awarding organisation, a scrutineer is responsible for checking the final drafts of all question papers and tasks to make sure that the questions can be answered in the time allowed, and that there are no errors or omissions. For all awarding organisations we found evidence of weaknesses in the way the scrutineers' role was either defined or being performed with the risk that the scrutineer does not do a foolproof job. So if, for example, the scrutineer checks the paper while at the same time making reference to the mark scheme, the check is not as robust as it needs to be.

We found quality assurance issues in all of the awarding organisations. So for example, it was not clear what evidence each of them could rely on to show that a quality check had been done properly, with the risk that individual checks have not been done, or done properly.

With the exception of ICAEE, the awarding organisations had well developed risk management processes. However, some types of paper are more prone to error. If the subject matter is technical rather than general, and/or the paper contains diagrams, graphs or formulae, it is easier to introduce an error and harder to spot it. We found awarding bodies were not managing these particular risks systematically, thereby increasing risk of error in such papers.

We found evidence of existing good practice in awarding organisations that helps to mitigate these risks. So for example, AQA produce clear guidance and documentation for staff and examiners. Edexcel use peer review early on in the process, to improve the quality of initial drafts of question papers. Edexcel's documentation of the end-to-end process is notably comprehensive clearly linking all elements from start to finish. OCR's chairs of examiners are permanently employed by OCR, rather than working in a less tied-in arrangement, and CCEA operate a performance incentive scheme for senior examiners. WJEC's use of an additional resource at an early stage to address some of the specific risks with the development of mathematics papers is good practice. However, there is scope for improvement in the awarding organisations' processes to best manage the risk factors we have set out.

## **Redress**

As part of the inquiry we also looked at how awarding organisations made sure that, as far as possible, candidates were not unfairly advantaged or disadvantaged by the errors. The regulators oversaw this work during the marking season, and we are familiar with the individual arrangements that were finally selected for each error.

Most people affected think that awarding organisations worked hard to inform schools and colleges of the steps they were taking in relation to questions containing errors. Some concerns were raised about the technical nature of some communications, and about the use of erratum slips. Erratum slips are used to correct mistakes (usually minor editorial matters) ahead of the examination. They have been a longstanding feature of the examination system, and although they are undesirable, we take the view that it is better to issue an erratum slip than to leave uncorrected an error that could confuse a candidate.

There were more mixed views on whether the awarding organisations' approaches to redress were always the best, but the overall view is that candidates got the right grades. We know that a single approach for all the errors would not have been fair to all candidates, and we believe the approaches awarding organisations settled on for each error were acceptable, and as fair as possible.

## **Communication**

The awarding organisations issued statements to provide reassurance to candidates, schools and colleges when the errors first came to light, and we have looked at the effectiveness of awarding body communications then and throughout the examination and marking season. We make suggestions for improvement.

## **Recommendations**

The following recommendations have been identified to help reduce the risk of errors occurring in future examinations, and improve the handling of errors if they occur.



Awarding organisations should:

1. review its ways of working and management arrangements for the production of question papers, including considering the use of teams of examiners to write questions
2. conduct a risk assessment of each subject and associated papers to identify improvements to the question paper production process that can reduce the likelihood of errors
3. clarify the accountabilities, roles and responsibilities of the people who are involved in the question paper production process
4. clarify the evidence required to provide assurance that a particular process has been completed in line with expectations and has produced the desired outcome
5. review its arrangements for managing the performance of examiners involved in the question paper setting process, and review succession plans
6. review training and guidance provided to all those involved in the question paper setting process, including mechanisms for identifying training needs
7. review the risks of errors being introduced when its question papers are modified to make the paper accessible to candidates with particular requirements, paying particular attention to when third parties are used and when question information needs to be re-keyed
8. review its strategies and protocols for communicating with schools and colleges, candidates and other stakeholders when incidents occur, including evaluating the use and impact of social media
9. work with other awarding organisations to provide guidance to schools and colleges on the steps to take should an error be discovered during an examination.

## **Conclusion**

In recent years awarding organisations have made significant improvements in their arrangements for marking question papers. What are known as electronic marking systems are prevalent, and we welcome these developments, as they enable awarding organisations to enhance marking quality. In contrast, the way question papers are developed – whereby one examiner is generally responsible for drafting a question paper – has remained virtually unchanged for years, if not decades. Awarding organisations need to look afresh at the process, with our recommendations in mind.

It takes time and expertise (both subject expertise and assessment expertise) to develop a high-quality paper. Investment in getting the paper correct at the beginning of the process should pay dividends later on. A new balance needs to be struck between front-end investment in the draft paper, and additional checks and amendments later on.

Lastly, awarding organisations have different management and quality assurance arrangements, with some awarding bodies better than others in some respects. Whatever the arrangements, they should have prevented the errors being present in live papers, but individuals within the process failed to pick up the errors. Scrutineers and examiners have pivotal roles to play, and they need to perform consistently well for the system to work really well.

Some awarding organisations have more improvements to make than others. Edexcel's approach to managing the production of question papers has proved to be the most reliable in reducing the risk of error. In contrast, there are serious shortcomings in ICAAE's processes and procedures which need to be addressed urgently. The other awarding organisations have different strengths and weaknesses which they will need to consider in the light of our recommendations.

The data provided are not sufficiently robust to conclude whether the 2011 errors within the scope of the inquiry represent an unusual change in the number of errors year on year. Certainly errors have occurred in previous years, but this is the first year of our new regulatory arrangements that require awarding organisations to report errors promptly. What we can say is that together, the number and nature of errors this year was unacceptable. The risk of examination error will be reduced significantly if the awarding organisations act on our recommendations.

We look to each awarding organisation to evaluate existing ways of working, informed by our general findings and matters specific to them. We expect awarding organisations to continue the shorter-term additional quality assurance checks they have already instigated, pending longer term changes.

The regulators are developing their regulatory arrangements, learning from the experience of examination errors this year. The Code of Practice is already under review, and lessons learned from the summer will feed into that review. In addition the regulators will develop:

- a set of redress principles, to guide awarding body decision-making on redress in future
- guidance on how awarding bodies can communicate better should similar circumstances arise in future
- monitoring arrangements, to consider how effective the arrangements for question paper production are in future.

## **Background**

GCSEs, GCE AS and A levels are offered by six awarding organisations across England, Wales and Northern Ireland. They are AQA, CCEA, Edexcel, ICAAE, OCR and WJEC. Ofqual regulates in England, and works with the regulators of these qualifications in Wales (DfES) and Northern Ireland (CCEA) to ensure consistency across the three countries.

On 7th June we wrote to these awarding organisations, having been alerted to some errors in question papers. We required awarding organisations to do extra quality checks on papers still to be sat.

Each awarding organisation gave a written assurance, by 13th June, that extra quality checks had been or would be made before outstanding papers were sat. These further checks were generally effective, but two examination papers set by OCR and sat after 13th June contained errors. The rest of the summer examination series passed without incident, except for two printing errors affecting some (but not all) candidates who sat the paper.

By the end of the summer 2011 examination series, 12 question paper errors in examinations offered by AQA, Edexcel, CCEA, OCR and WJEC were identified. Details of the question papers, the errors and redress can be found at Appendix 1.

Each summer, awarding organisations that offer GCSEs and A levels set over 60,000 examination questions, employ and train 50,000 examiners and moderators, mark over 25 million separate examination scripts and items of coursework and then issue over 8 million GCE (AS and A level) and GCSE results.

The question paper development and production process is complex. It relies on the commitment of around 2,600 examiners (who are generally teachers, or former teachers) setting examination papers. Different functional groups within the awarding organisations work with examiners and with a range of other external suppliers, particularly printers. There are a significant number of interdependencies and critical control points for awarding organisations to manage.

### **Inquiry terms of reference**

On 1st July 2011, we initiated an inquiry into the errors to:

- establish the facts and ascertain the root causes of the errors
- consider how effectively the awarding organisations communicated with candidates, centres and other stakeholders
- identify any improvements necessary in awarding organisations' procedures

- consider the arrangements for risk management and redress that should be used in the future and any implications for the regulatory arrangements to hold awarding organisations most effectively to account.

The 12 known examination errors involving examinations offered by AQA, Edexcel, CCEA, OCR and WJEC are included within the scope of the inquiry.

During the course of the inquiry we also considered an error in the modified version of a WJEC GCSE Chemistry paper, a printing error which affected a small number of candidates taking the Edexcel GCE AS Biology 6BI01/01 paper (already in scope) and a complaint concerning errors in OCR's GCE AS ICT (unit G062) mark scheme. Our visit to ICAAE also identified three errors in ICAAE papers, two of which were corrected by erratum notices.

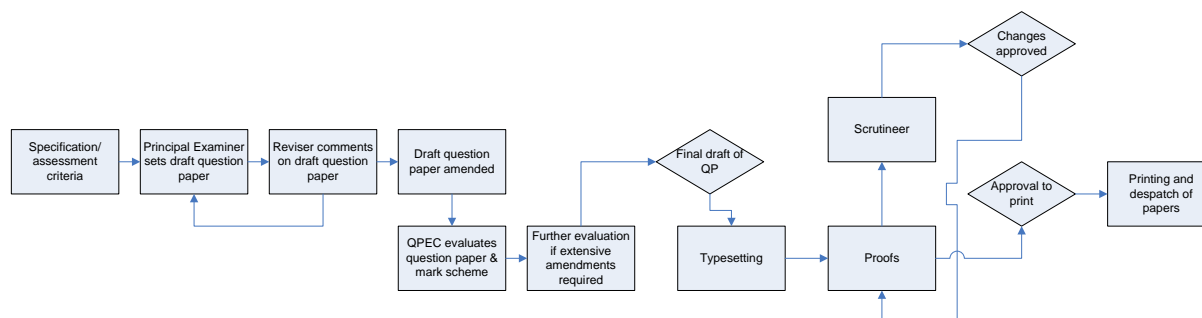
The full terms of reference for the inquiry can be found at:

[www.ofqual.gov.uk/files/2011-07-08-exam-errors-inquiry-tor.pdf](http://www.ofqual.gov.uk/files/2011-07-08-exam-errors-inquiry-tor.pdf)

## The question paper development process

The question paper development process is complex and the end-to-end process – from the commissioning of the paper to printing and distribution – normally takes between 14 and 18 months. The successful delivery of high-quality papers relies on the commitment of around 2,600 examiners setting examination papers. In the main these examiners are externally contracted and are teachers, or former teachers.

Different functional groups within awarding organisations work with examiners and a range of other external suppliers such as printers. There is a significant number of interdependencies and critical control points to manage. A high level overview of the question paper production process can be found overleaf.<sup>3</sup>



Each awarding organisation is responsible for the quality of its question papers. Awarding organisations that deliver GCSE and GCE qualifications have to comply

<sup>3</sup> There are additional processes for the production of Welsh medium papers and modified papers.

with a Code of Practice<sup>4</sup> that the regulators produce. It lays down the principles, processes and practices for each awarding organisation for the assessment and quality assurance of qualifications covered by the code.

Of the ten sections of the Code, sections 1 and 3 are most relevant to this inquiry. Section 1 sets out the responsibilities of awarding organisations and their people (including examiners). Section 3 sets out what awarding organisations must do to produce and mark question papers effectively.

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<sup>4</sup> The GCSE, GCE, Principal Learning and Project Code of Practice (2011) can be accessed via the following link: [www.ofqual.gov.uk/for-awarding-organisations/96-articles/247-codes-of-practice-2011](http://www.ofqual.gov.uk/for-awarding-organisations/96-articles/247-codes-of-practice-2011)

## **Inquiry approach**

The inquiry looked at systems and procedures for the development and production of question papers used by all the awarding organisations that offer GCSE and A level qualifications.

### **Awarding organisation visits**

We visited the offices of AQA, CCEA, Edexcel, ICAAE, OCR and WJEC between 6th and 28th September 2011 to:

- establish the facts and ascertain the root causes of the errors that are within the scope of the inquiry
- review awarding organisations' existing processes and quality assurance procedures for the production of question papers
- collect evidence about how awarding organisations communicated with candidates, centres and other stakeholders.

All awarding organisations cooperated freely with the inquiry team. We interviewed 53 people across the awarding organisations and undertook a document review in each organisation as part of this inquiry (see Appendix 8).

Our early work in the inquiry led us to focus on the following areas:

- roles and responsibilities within the question paper production process
- development, operation and management of the question paper production process
- quality assurance systems and checks
- audit trail and documentation requirements
- risk management arrangements
- evaluation and improvement of the question paper production process.

Appendices 2 to 7 set out the facts for each awarding organisation, and the factors which may have caused the errors.

### **Evidence from key stakeholders**

We invited key stakeholders to submit written evidence. In particular, we asked for evidence about:

- how and when the errors first came to light

- how the errors were dealt with by schools and colleges, and any instructions given to candidates during the examination
- how candidates dealt with the errors and the impact the errors had on them during the examination
- the effectiveness of awarding organisations' communications.

The letter inviting stakeholders to submit evidence can be found at Appendix 9. Details of the organisations that responded can be found at Appendix 10. A summary of the main issues raised by stakeholders can be found at Appendix 11.

### **Awarding organisations' internal investigations**

Awarding organisations conducted their own investigations into the nature and cause of the errors. The findings of the awarding organisations' own investigations were considered during the fact-finding phase of this inquiry.

The Joint Council for Qualifications (JCQ) issued a statement on 16th September 2011 providing a link to the awarding organisations' internal investigation reports.

### **Issues identified in the first phase of the inquiry**

In the first phase of the inquiry we identified areas of particular interest. They were:

- the adequacy of the awarding organisations' risk management arrangements to deal with the challenges of developing question papers for particular subjects
- the strategies and protocols for communicating with schools, colleges, candidates and others when incidents occur
- the suitability and impact of the use of erratum notices when errors are discovered before an examination
- the redress mechanisms used to ensure fair outcomes, and how the technical detail is conveyed.

## **Review of awarding organisations' redress and communications mechanisms**

### **Redress mechanisms**

The redress actions taken by awarding organisations varied depending on the nature and circumstances of the error. The actions taken included any of the following measures or combination of measures:

- adjusting the mark scheme to omit the question concerned for all candidates (with the total mark of the paper amended accordingly) or giving all candidates credit for that question
- revising the mark scheme to enable credit of alternative correct answers that candidates might have provided as the result of the error
- conducting a statistical review of how an error impacted on the demand of the paper for all candidates, so as to inform the setting of grade boundary requirements for that paper
- applying special consideration to individual candidates where the awarding organisations' analysis of candidates' performance indicated that particular individuals' performance had been significantly affected by an error when compared to performance on other examinations in the same subject
- applying special consideration in response to requests from schools and colleges who indicated that an individual or groups of candidates had been particularly disrupted or adversely affected by the error.

Details of the redress measures implemented for each question paper can be found at Appendix 1. We oversaw awarding organisations as they decided the most suitable arrangement for each error. The individual nature and circumstances of each error mattered, with awarding bodies having to identify the most appropriate redress or combination of redress measures for each of the errors. A single approach would not have secured fair outcomes. Awarding organisations took significant steps to gauge the impact of the errors on the cohort at large and on individual candidates. In many cases this involved examiners scrutinising individual candidates' scripts.

The real effort by awarding organisations to ensure a level playing field was generally acknowledged by stakeholders we spoke to. Many felt that the awarding organisations did a good job of ensuring that affected candidates received appropriate grades. Awarding organisations indicated that, on the whole, no significant concerns were raised by schools, colleges or candidates regarding the results for the affected papers.



## **Communications**

The errors this summer came to light as candidates sat the examinations. Awarding organisations were alerted by schools or colleges either whilst the examination was being sat, or shortly afterwards. From what we have seen, examinations officers and invigilators may not always be best equipped to deal with errors and provide appropriate advice and reassurance to candidates in the examination hall.

Awarding organisations have procedures for dealing with incidents during the examination. Incidents are often first reported to the awarding organisations' customer contact centre, and subject staff are normally required to be available at the time of the examination to deal with queries. Awarding organisation staff are normally instructed not to suggest changes to the wording of the question, or to how the examination should be conducted. Instead, they are to provide reassurance that any incident will be considered subsequently (during marking) so as to ensure no candidate taking the examination is disadvantaged. All the awarding organisation staff we talked to during this inquiry clearly understood their organisation's approach to handling errors.

There was evidence of good communication with schools and colleges contacting the relevant awarding organisation on the day of the examination. Awarding organisations generally provided reassurance that the error was being investigated and that measures would be put in place to ensure that candidates would not be disadvantaged.

Generally, awarding organisations called schools and colleges who had initially been in contact, to explain the nature of the error and the proposed actions. They also emailed or wrote to schools and colleges apologising for the error and informing them of the proposed redress measures. Schools and colleges were invited to apply for special consideration for any candidate who they felt had been unduly affected.

The awarding organisations and their representative body, the Joint Council for Qualifications (JCQ) issued statements about the nature of the errors, details of redress actions and guidance to candidates on what to do if they felt their performance may have been affected.

We and the awarding organisations issued statements to provide reassurance to schools, colleges and candidates when the errors first came to light. In the period between the time when an error was first identified and the time when awarding organisations had agreed the right redress, communications were patchy. The awarding organisations were working hard to determine and apply the right redress across over 100,000 scripts. Nevertheless and for entirely understandable reasons, some of those affected wanted information and reassurance more quickly.

The main channel of communication about examinations is between awarding organisations and the relevant school or college rather than the candidate, but

candidates told us they cannot always rely on schools and colleges to provide information. School term ends with examinations, and of course marking generally happens when schools and colleges are taking their summer break.

With the use of social media, concerns can circulate rapidly. Some awarding organisations monitor social media, have their own social media presence and direct people to messages and statements published on their websites. We think this is a sensible and valuable approach, alongside regular website updates.

## **Areas for improvement**

### **Risk management**

Awarding organisations assess and manage the strategic and operational risks associated with the delivery of examinations. Risks are monitored and reported. There are clear escalation routes and we found them widely understood by all those involved in the question paper production process.

Developing and producing high quality question papers is particularly challenging in certain sorts of subjects, for two reasons.

Firstly, the production process for some papers is more complex. For example, geography question papers include resources such as maps which require a high level of graphic design input. Subjects such as Business Studies may require more “real life” resources or contextual information to support questions which in turn may require copyright permission. These complexities add to the time it takes to develop the paper and in turn create pressure points.

Secondly, many of the errors this summer involved diagrams, tables, formulae or technical information where only a subject specialist would see the mistake. That means that to an uninformed eye, a question seems right when in fact it is not.

To mitigate the risks associated with examination paper design in certain subjects, it would help if the principal examiner worked closely with the graphic designer at the beginning of the question paper writing process, or else the graphic designer was present when diagrams are discussed when the Question Paper Evaluation Committee (QPEC) of the awarding organisation meets to evaluate draft question papers.

Although we found evidence of teams within the awarding organisations adapting their processes to address these risks, for example by using an additional scrutineer or technical proof-reader, we found no systematic assessment of the risks associated with particular subjects or question papers.

## **The impact and management of late changes**

The risk of errors increases if changes are made late in the day.

There is evidence of question papers undergoing significant revision during the QPEC process. However, one of the main purposes of QPEC is to evaluate the question papers to ensure that the challenge and level of question papers/tasks is maintained from one series to the next. Logically, significant revisions to the question paper should be made *before* the QPEC meeting.

Given that significant revisions should be made before QPEC, and in practice revisions are made at or by QPEC, it is reasonable to expect only minimal changes after a paper has been to QPEC.

Many of the errors which occurred this summer were the result of changes being made late in the production process, that is, *after* QPEC scrutiny, and in some cases after what should have been the final quality check, for example after the paper had been reviewed by the scrutineer.

The focus of awarding organisations should be on “front loading” quality within the question paper development process – in terms of improving the quality of the draft papers that are reviewed by QPEC. More active monitoring of outputs from the drafting and revision process, intervening where necessary, would pay dividends and materially reduce the risk.

## **Management of the question paper production process**

The question paper development and production process is complex. The end-to-end process – from the commissioning of the paper to printing and distribution – normally takes between 14 and 18 months. The successful delivery of high-quality, error-free, papers relies on the commitment of 2,600 mainly externally contracted examiners and numerous exchanges between different internal functional groups and with external suppliers such as printers. On the whole, awarding organisations manage the process well, but sometimes a lack of clarity or understanding of the different roles and accountabilities of individuals increases the risk of errors occurring.

## **Role and management of examiners**

The expertise of senior examiners, revisers and scrutineers is critical to the successful delivery of high-quality question papers. The system relies on their professionalism, dedication and commitment. The current model for developing question papers is that a principal or chief examiner has responsibility for drafting the whole question paper, which is commented on by a reviser and evaluated by a committee of examiners at QPEC. The design of the question paper therefore relies on a small number of individuals.

For many examiners their involvement in the question paper production process is something they do in addition to their full-time jobs, often in schools. If deadlines are

not met, issues that need to be resolved are sometimes deferred to the next stage of the question paper process. So, comments on early drafts of papers may be left for QPEC to consider and resolve. Sometimes, late and unplanned intervention by other examiners has unintended consequences.

In some instances where errors occurred, the awarding organisation had concerns about the principal examiner's question paper drafting skills, but the examiner was nevertheless asked to see the paper through to print. This is clearly risky, but awarding organisations point out there is not always a ready supply of suitably qualified people who will commit the necessary time to serve as an examiner.

The examiner generally starts drafting question papers for the next examination series before papers for the current series have been signed off, and this cycle and overlap means that removing an examiner can itself significantly increase the risk either to current or future papers.

Although there is evidence that awarding organisations have processes in place for managing the performance of examiners, the arrangements are not always formalised or sufficiently rigorous, in particular in relation to identifying possible training needs.

Commendably, some awarding organisations seek to enforce desired behaviours through the use of question paper templates, report forms and guidance and training. However, these are not always adhered to by examiners and awarding organisations do not always intervene early enough when they have concerns about the quality of drafts.

The relationship between awarding organisation staff and examiners is critical to the successful delivery of high-quality question papers. Examiners are a precious and critical resource, and it is often difficult for awarding organisations to give examiners feedback and manage their performance.

Awarding organisations therefore need to consider where improvements can be made in relation to:

- ways of working, for example having a team of question writers rather than just one examiner
- succession planning
- scheduling of deadlines to avoid peak times in the academic calendar
- performance management of examiners
- clarification of examiners' responsibilities and accountabilities within the assessment production process.

## **Quality controls**

The awarding organisations' quality control measures all involve the scrutiny of papers by someone known as the scrutineer. This is a critical role, a backstop to make sure that the question paper is fit for purpose and free from error. The Code of Practice states that the scrutineer is responsible for:

- checking the final drafts of all question papers/tasks, without reference to the mark scheme, to ensure that the questions can be answered in the time allowed and that there are no errors or omissions
- working through question papers, where appropriate
- checking the mark scheme to ensure that the marks given are identical to those on the question paper
- preparing a report for the awarding organisation

In some cases it is evident that the scrutineer did not check the final version of the question paper. We know this, as further substantive changes were made to the paper after the scrutineer had checked and cleared it.

The guidance which awarding organisations provide to scrutineers does not always clearly set out what the scrutineer is expected to do, or the required outputs. There are evident risks if scrutineers do not know clearly enough what is expected. Scrutineers are more remote from the assessment production process than many of the other players, making clear guidance all the more important.

The evidence that awarding organisations require to provide assurance that a particular process has been completed in line with expectations and produced the desired outcome is not always clearly defined. For example, scrutineers may be asked to work through the question paper but they are not required to submit a copy of the worked paper. Scrutineers are also instructed to check the paper without reference to the mark scheme, but as they are routinely sent the question paper and mark scheme at the same time, awarding organisations cannot be certain when the mark scheme was brought into play.

There may also be implicit expectations that a proof-reading check will identify errors in question papers because it is carried out by a subject specialist. In fact the instructions do not require the proof-reader to check the workings of questions. There is evidence of a lack of clarity regarding checks that senior examiners are asked to make on the question paper proofs and initial batches of printed papers.

The accuracy and validity of a question paper can be compromised by a number of factors including:

- a spelling, punctuation or grammatical mistake

- a factual inaccuracy in a question or mark scheme
- repeating a question from a recent paper
- not assessing the appropriate standards
- inconsistencies between different parts of a paper or question, or between the question paper and the mark scheme.

It takes time and energy for a single individual to check all of these. Some people within the assessment production process may be better equipped to spot these issues than others. For example, awarding organisation staff may have proof-reading training whilst examiners do not. By not having clearly defined roles and responsibilities, and assessment of the skills required, there is a risk that time and effort is spent reviewing elements of the question paper by individuals who are not sufficiently trained or experienced, to the detriment of those elements which they are better equipped to scrutinise.

### **The Code of Practice**

In most cases we found that the awarding organisations' process and procedures met the requirements of the Code of Practice and in many cases the awarding organisations' processes exceeded the minimum requirements of the Code. Nevertheless, errors still occurred. When dealing with the development of question papers, the Code tends to focus on activities to be completed within a process rather than the desired outcomes or expected quality standards. This focus on activity rather than outcomes is also evident in the awarding organisations' own procedures and supporting documentation. For example, procedural documentation often contains a lot of detail on the tasks and checks that should be performed, but does not set out what the intended outcome should be or what the purpose of the task is.

Awarding organisations agree that a Code of Practice is required for GCSE and A levels, to ensure a common set of industry standards are applied between organisations offering similar qualifications. However, the Code of Practice predates the current regulatory landscape. We were already reviewing it to make sure it remains fit for purpose and is consistent with the developing strategic approach to regulation, and will take into account lessons learned from the summer examination series and from this inquiry.

### **Recommendations**

The following recommendations have been identified to help reduce the risk of errors occurring in future examinations, and improve the handling of errors when they happen.

Awarding organisations should:

1. review its ways of working and management arrangements for the production of question papers, including considering the use of teams of examiners to write questions
2. conduct a risk assessment of each subject and associated papers to identify improvements to the question paper production process that can reduce the likelihood of errors
3. clarify the accountabilities, roles and responsibilities of the people who are involved in the question paper production process
4. clarify the evidence required to provide assurance that a particular process has been completed in line with expectations and has produced the desired outcome
5. review its arrangements for managing the performance of examiners involved in the question paper setting process, and review succession plans
6. review training and guidance provided to all those involved in the question paper setting process, including mechanisms for identifying training needs
7. review the risks of errors being introduced when its question papers are modified to make the paper accessible to candidates with particular requirements, paying particular attention to when third parties are used and when question information needs to be re-keyed
8. review its strategies and protocols for communicating with schools and colleges, candidates and other stakeholders when incidents occur, including evaluating the use and impact of social media
9. work with other awarding organisations to provide guidance to schools and colleges on the steps to take should an error be discovered during an examination.



## Appendix 1 – Overview of question paper errors

Ref. no.	Awarding organisation	Qualification paper/unit	Description of error and marks affected	Date of examination	No. of candidates entered for this examination	Redress actions implemented by the awarding organisation
1.	AQA	GCE AS Business Studies (BUSS2)	<p>Profit figure required to calculate answer was not available.</p> <p>Question worth 3 marks out of 80 on the paper.</p>	24th May 2011	41,612 (of which 7,487 were due to complete A level).	<p>Mark scheme amended to discount the question and scale up the marks. Use of statistical evidence on the impact on the cohort as a whole when setting grade boundaries.</p> <p>Item Response Theory analysis undertaken to scrutinise performance on individual questions and identify instances where a candidate had been disproportionately affected by the error, for example, to identify where a candidate performed markedly worse on questions following the error than preceding it. Such instances were selected for individual scrutiny by examiners.</p> <p>Claims for special consideration considered individually on a case-by-case basis.</p>
2.	AQA	GCE AS Computing	One line in a diagram of a computer system printed shorter than it	7th June 2011	3,651 (of which 357 were due to	Mark scheme amended to award full marks to all candidates for the question containing the error. Use of statistical evidence on the

		(COMP2)	<p>should have been.</p> <p>Question worth 5 marks out of 60 on the paper.</p>		complete A level).	<p>impact on the cohort as a whole when setting grade boundaries.</p> <p>Item Response Theory analysis undertaken to scrutinise performance on individual questions and identify instances where a candidate had been disproportionately affected by the error, for example, to identify where a candidate performed markedly worse on questions following the error than preceding it. Such instances were selected for individual scrutiny by examiners.</p> <p>Claims for special consideration considered individually on a case-by-case basis.</p>
3.	AQA	GCE AS Geography (GEOG2)	<p>Diagram labelled incorrectly: the velocity reading on the Y label read 0.5 instead of 0.05.</p> <p>Question worth 4 marks out of 50 on the paper.</p>	24th May 2011	19,615 (of which 2,007 were due to complete A level).	<p>Mark scheme amended to award full marks to all candidates for the question containing the error. Use of statistical evidence on the impact on the cohort as a whole when setting grade boundaries.</p> <p>Item Response Theory analysis undertaken to scrutinise performance on individual questions and identify instances where a candidate had been disproportionately affected by the error, for example, to identify where a candidate performed</p>

						<p>markedly worse on questions following the error than preceding it. Such instances were selected for individual scrutiny by examiners.</p> <p>Claims for special consideration considered individually on a case-by-case basis.</p>
4.	AQA	GCSE Mathematics (Unit 2 43602F)	<p>Printing error affecting several questions on some question papers.</p> <p>Total mark for this unit was 66 marks. On the incorrect version, 51 marks were for questions originally set in March, 11 marks were for June questions which could be attempted and 5 marks related to the second part of question 16 which could not be attempted.</p>	21st June 2011	31,659 of which a maximum of 1,386 candidates sat the version with the printing error.	<p>Statistical analysis was undertaken on affected scripts, including the derivation of predicated grades (using the same method to that used for unaffected scripts). This was used to set grade boundaries which were of an equivalent standard to those set for the unaffected papers. Relevant special consideration adjustments were made prior to the distributions and predications being derived.</p>
5.	AQA	GCSE Chemistry (CHY1AP)	A collation error resulted in a section of the paper being duplicated.	28th June 2011	45,685 candidates, of which 137 were found to have had the version with the	The affected 6 marks were discounted and the remainder were scaled up to the maximum paper mark (36).

			Maximum of 6 marks out of 36 marks were affected.		error.	
6.	CCEA	GCE A2 Further Mathematics (FP2)	<p>An equation on the last question of the paper contained an error.</p> <p>Question worth 2 marks out of 75 on the paper.</p>	31st May 2011	122 (of which all 122 were due to complete A level).	<p>The question was marked by a single examiner. Parts 2 and 3 of the question were affected by the error. The mark scheme was adjusted to credit method, and marks were awarded in light of the work presented. Each paper was reviewed by the senior examining team. A statistical analysis including comparison of previous years' mean scores and standard deviations was carried out.</p> <p>Claims for special consideration were considered individually on a case-by-case basis.</p>
7.	CCEA	GCSE Business Studies (GBS2)	<p>A cash flow forecast table contained an error but all questions could still be answered accurately.</p> <p>Question worth 5 marks out of 90 on the paper.</p>	6th June 2011	3,440 (of which 549 were from centres in England).	<p>Every script was reviewed by the senior examiners to establish any impact that the error may have had. The mark scheme was amended to credit alternative answers based on a candidate making a correction to the cash flow table. The analysis of the error and impact was taken into consideration when awarding and grade boundaries were set accordingly.</p>

						Claims for special consideration were considered individually on a case-by-case basis.
8.	Edexcel	GCE AS Biology (6BIO1)/01	A multiple choice question with no correct response to choose from.  Question worth 1 mark out of 80 on the paper.	16th May 2011	15,784 (of which 1,334 were due to complete A level).	Mark scheme amended to discount the question. Statistical analysis of cohort performance and item level analysis of questions preceding and subsequent to the error in order to inform the awarding process. Individual candidates' estimated grades from their teacher and their performance in other GCE AS Biology units was reviewed to assess impact.  Claims for special consideration were considered individually on a case-by-case basis.
			A printing error affecting nine candidates taking the paper was identified during marking.			Each affected candidate's performance throughout the paper was reviewed. A percentage adjustment was made to their marks in line with their performance on the rest of the paper.
9.	OCR	GCE AS Decision Mathematics (4736)	The question contained two incorrect expressions which made it impossible for candidates to prove	26th May 2011	6,473 (of which 2,938 were due to complete A level).	All examiners were instructed to pay special attention to the question. Crossed-out work was marked even if it had been replaced and credit given for the most accurate attempt. Examiners forwarded scripts to

			<p>them.</p> <p>Question worth 8 marks out of 72 on the paper.</p>			<p>team leaders for candidates where there was evidence of having been disadvantaged.</p> <p>Statistical analysis undertaken including item level data analysis, comparisons with candidate performance in other units and with predicted performance.</p> <p>Claims for special consideration were considered individually on a case-by-case basis.</p>
10.	OCR	GCE A2 Physics (G485)	<p>Two units of measurement, centimetres and metres, were used within a question where only metres should have been used.</p> <p>Question worth 2 marks out of 100 on the paper.</p>	21st June 2011	7,690 (of which 7,608 were due to complete A level).	<p>Mark scheme amended to recognise answers that were based on the alternative measurement: answers based on one unit of measurement could be 100 times greater than if they had used the intended unit of measurement.</p> <p>Statistical analysis undertaken including item level data analysis, comparisons with candidate performance in other units and with predicted performance.</p>
11.	OCR	GCSE Latin (A403/02)	<p>Three questions with errors in the names given in Section B of the question paper.</p>	20th June 2011	7,920 of which 5,302 opted for Section B.	<p>The mark scheme was amended to take account of the errors in the paper. Senior examiners were informed of any candidates where there was evidence that they had</p>

			<p>Candidates chose to answer either Section A or Section B of the paper.</p> <p>Questions worth 2, 2 and 10 marks respectively out of 50 on the paper.</p>			<p>been confused by the affected questions. A statistical analysis of item-level data was carried out before the awarding process to assess the effect of the errors and to inform judgements as to whether any compensatory adjustment of marks was needed.</p>
12.	WJEC	GCE A2 Mathematics (C3)	<p>Within the large-print version of the paper, question 2 had an incorrect equation, and question 7(b) had a vertical line missing from a modulus symbol in the equation.</p> <p>Taken together the two questions were worth 9 marks out of 75 on the paper.</p>	26th May 2011	Two candidates used the modified large-print version of the question paper (both were due to complete A level).	<p>The scripts of the two candidates affected were scrutinised individually in order to (i) ascertain whether they had been able to access the correct version of the question, including from the standard print version of the paper which was also available to them, (ii) award method marks in a situation in which correct work had been produced in attempting the incorrect version of a question, (iii) ascertain whether there was any evidence of wider impact on their work across the paper as a whole which required special consideration (e.g. insufficient time to complete).</p>

## **Appendix 2 – AQA**

### **Management of the question paper production process**

AQA has clearly documented procedures governing the development up to the question paper evaluation committee (QPEC) meeting and production (post-QPEC) of question papers. Responsibility for the development and production of question papers is divided between different divisions and functional groups across AQA. The subject teams are responsible for managing the development of question papers up to the QPEC meeting, whilst Question Paper Control (QPC) is responsible for monitoring the post-QPEC production phase and sits in a different directorate from the subject teams. The Print and Logistics team is responsible for the printing, packing and despatch of papers but sits in a different directorate from both the subject teams and QPC.

The printing error affecting the GCSE Mathematics [4]<sup>5</sup> paper revealed interface issues between QPC and Print and Logistics. The error occurred during the printing of additional supplies of the question paper. Five copies of the printed papers from the additional print run should have been sent to QPC for checking but this did not happen. However, there was no formal procedure for notifying QPC when an additional print run had been ordered by Print and Logistics. In addition, the Print and Logistics and QPC teams each maintained their own management information systems for tracking the progress and production of question papers. This contributed to a lack of clarity regarding critical handover points and the role and responsibilities of the teams within the process. We also noted that even if the five printed copies of the question papers had been sent to QPC for checking, the papers with errors would have still been despatched to centres as there was no requirement for the additional print run to be checked and signed off prior to despatch. The check, had it occurred, would have enabled remedial action to be taken prior to the examination.

When talking to some AQA staff about the end-to-end process for question paper production the start of the process was viewed as being at the beginning of the post-QPEC phase and not from the point when the Principal Examiner is commissioned to produce a draft paper.

The deadlines by which question papers should be ready for final printing – Pass for Print – are determined by QPC. However, subject managers are responsible for scheduling and managing the commissioning, revising and evaluation of question papers in order to ensure the deadlines are met, and for signing off the final version of the question paper. The subject teams use an electronic system to plan each

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<sup>5</sup> Where individual errors are referred to a reference number is given in brackets. This relates to Appendix 1 where further information regarding the error can be found.



stage of the production process. QPC monitors progress to ensure the Pass for Print deadline is met.

Subject managers have a variety of responsibilities. For example, as well as being responsible for question paper development they are responsible for: specification development, arranging training for examiners, developing support materials, day-to-day interaction with centres, attending conferences and the operational delivery of examinations including standardisation and marking. These sometimes competing responsibilities may cause pressure points in the question development process. For example, in the case of the GCE AS Business Studies [1] and GCE AS Geography [3] papers which had errors, some of the deadlines within the question paper production process had been missed. In the case of GCE AS Geography, the Pass for Print deadline was also missed.

AQA's question paper development process – and the guidance issued to staff and examiners – reinforces the expectation that the draft of the question paper coming out of the QPEC meeting should be the final version. However, with the exception of the printing errors affecting GCSE Mathematics and Chemistry, the errors were introduced after the QPEC. In the cases of the GCE AS Geography [3] and GCE AS Computing [2] papers the errors were introduced as a result of changes made to diagrams after the QPEC meeting. There is evidence that papers submitted to QPEC are sometimes not at an appropriate level of completeness and are not distributed to members sufficiently ahead of the meeting to allow the QPEC to fulfil its functions effectively. Furthermore, the process for deciding whether a paper has been revised to such an extent at QPEC that it requires further evaluation – as required by the Code of Practice – is not clear.

In the case of diagrams, the process sometimes relies on examiners producing hand-drawn diagrams which then have to be interpreted by a graphic designer after the QPEC meeting in order to provide a first proof typeset version of the paper. Where staff and examiners require amendments to diagrams at the proof stage communication is often by way of handwritten amendments on question paper proofs which are not always clear. Also, in the case of Geography, the graphic designer is expected to undertake cartography which is a very specific skill.

## **Quality checks**

AQA's procedures require that the first proof of the question paper which is produced after the QPEC is sent to the scrutineer for checking. The first proof is also sent to a proof-reader. The first proof including the scrutineer's comments is sent to the principal examiner and reviser for consideration. The subject manager receives the comments from the reviser, principal examiner and proof-reader and amends the first proof if required and a second proof is generated. This process continues until the paper is ready for printing. In the case of GCE AS Business Studies [1], the error was introduced in an early proof of the question paper by the principal examiner. The

scrutineer sat the paper using a proof version which contained the error but did not identify the error even though the error meant the question could not be answered. In the case of GCE AS Geography [3] and GCE AS Computing [2] the errors were introduced after the scrutineer had reviewed the paper at the first proof stage and there was no provision for the scrutineer to re-check the final versions of papers where late changes are made.

The expectation, as required by the Code of Practice, is that the scrutineer should work the question paper as if they were a candidate, that is, without reference to the mark scheme, to ensure that the questions can be answered in the time allowed and that there are no errors or omissions. However, the importance of this expectation may not always be clearly communicated or fully understood. Furthermore, the scrutineer receives the question paper and mark scheme at the same time so the awarding organisation cannot be sure that the scrutineer has worked the paper without reference to the mark scheme. Variations in the quality and detail of scrutineers' reports also impact on the extent to which AQA can be fully assured that a question paper has been scrutinised in line with its expectations.

AQA's quality assurance procedures involve the checking of an initial batch of ten copies of the printed question papers – five copies are sent to QPC and five copies are sent to the subject manager. The subject manager sends a copy of the printed paper and the final mark scheme to the principal examiner for sign-off. This check did not identify the errors. However, the checks that AQA expected to be carried out at this stage were not clearly articulated. Similarly, in the case of GCE AS Geography [3], the chair of examiners, the principal examiner and the chief examiner were asked to approve the new artwork which was produced late on during the proof phase but there was a lack of clarity as to what checks they were expected to carry out.

## **Role and management of examiners**

Managing the performance of examiners to ensure they meet deadlines and produce draft papers which are of sufficient quality to be considered by QPEC is critical to ensuring error-free papers. In the case of GCE AS Computing [2], AQA had concerns about the quality of the initial drafts of the question papers produced by the principal examiner. This resulted in a number of versions of the paper being produced by the examiner team before an acceptable draft of the question paper was ready for consideration by the QPEC. The principal examiner was asked to resign but was required to see the paper through to print.

Although AQA has mechanisms in place for handling concerns about an examiner's performance, for example by involving the chair of examiners, there is no formal performance review process. Furthermore, senior examiners have often been examining for many years and feel they have ownership of the question paper process, when in reality they are external contractors. This can result in an imbalance of power and experience between the subject manager and the examiners, which in

turn can make managing the question paper production difficult when the delivery of papers within a tight timescale is reliant on a small number of examiners.

There was evidence of individual subject teams taking ownership of the question paper development process and looking at ways to improve it. This included organising bespoke training sessions for examiners on improving question quality. However, there was an absence of any systematic evaluation of training and guidance requirements for examiners or formal mechanisms to facilitate the sharing of good practice between teams.

## **Appendix 3 – CCEA**

### **Management of the question paper production process**

CCEA's process and procedures for question paper development and production are clearly defined and documented in accordance with the organisation's ISO9001 Quality Management System. Responsibility for the production of question papers rests with the education managers (subject officers), the Question Paper Production unit (QPP) and examiners. The QPP unit and education managers reside in different divisions but within a single directorate. The QPP unit performs essentially an administrative support function in terms of managing the flow of material between the subject teams and printers and monitoring progress against deadlines. The education manager is responsible for the content of the question paper, ensuring examiners meet deadlines and signing off the final version of the question paper.

There is a complex set of interrelationships between the QPP unit, the education managers and the examiners. Although they all have roles and responsibilities in the question paper production process, it is not clear who is responsible for managing the end-to-end process. CCEA's procedures for question paper development state that the overall process of question paper production is managed by a technical manager. However, the technical manager's role is currently only to provide training and guidance.

The question paper production files are "owned" by the QPP unit rather than the education manager. This contributes to the ambiguity as to who is responsible for the question paper production process. Furthermore, some information was not present, including evidence that the question paper had been signed off by the education manager.

There was evidence of papers undergoing substantial revision at the QPEC stage even though CCEA procedures are based on the assumption that the version of the question paper coming out of the QPEC is almost final. CCEA indicated that previously question papers were revised by a committee of examiners. Principal examiners may sometimes defer unresolved issues for consideration at QPEC, rather than addressing them beforehand through dialogue with the reviser and/or the chief examiner.

In the case of GCE A2 Further Mathematics [6], the QPEC reviewed a handwritten version of the question paper rather than a typeset draft. Other subjects review a typeset version of the paper at QPEC. CCEA indicated that this was a historical practice.

QPEC meetings are serviced by a member of the Question Paper Production unit but CCEA's procedures do not require a member of CCEA staff to be present for the whole duration of the meeting. The recording of any changes is the responsibility of the chair of examiners. This approach may impact on the extent to which CCEA can

be assured that the procedures in relation to the evaluation of question papers and mark schemes have been properly followed and that there is an accurate record of the changes being made to the paper as well as the rationale for the changes.

There was evidence of poor version control and tracking of changes. It was not always possible to establish which version of a question paper had been seen when and by which examiner/scrutineer. In the case of GCSE Business Studies [7], a pencil correction with the correct value in the cash flow table was evident on the QPEC copy of the draft paper. This was misleading as the correction was made after the error was discovered when CCEA staff were trying to pinpoint the source of the error, thus compromising the accuracy of the audit trail.

## **Quality checks**

CCEA's procedures require that the question paper should be approved and reviewed by the education manager at five separate stages of development and these actions should be formally recorded. In the case of GCE A2 Further Mathematics [6] and GCSE Business Studies [7] there was no record of the papers being reviewed at three of the five stages.

The errors present in the GCE A2 Further Mathematics and GCSE Business Studies question papers were not detected by the proof-reading or scrutiny checks. Under CCEA's current procedures, the proof-reading process before the "last pull" stage is restricted to checking that corrections marked up on the previous version of the paper have been made. The examining teams that check the corrections have been made are not trained proof-readers but are provided with a checklist.

CCEA's procedures include a "last pull" stage where the chair of examiners, the chief examiners and the education manager receive copies of the final printed version of the question paper for checking and sign-off before the full print run commences. CCEA's Proofreading Checklist requires 14 checks to be carried out in relation to such issues as the pagination, colour of diagrams, rubrics, referencing and question wording. However this process does not check whether there are issues which may affect how the questions work.

## **Role and management of examiners**

There are variations in the expectations of the role being performed by the scrutineer. There is also variation in the quality and detail of the reports provided by the scrutineer. This has an impact on the extent to which CCEA staff can be assured that the paper has been scrutinised satisfactorily.

CCEA runs an annual conference for its chair of examiners and chief examiner. The conference is used to consider any issues regarding question paper production – including errors – and sets performance expectations in terms of quality and meeting schedules for the forthcoming year. However, no specific training sessions are held

for principal examiners. The expectation is that the chair of examiners and chief examiner will feed back issues from the annual conference to them.

CCEA operates an incentive scheme designed to improve the performance of its senior examiners. The chair of examiners and the chief examiner can enhance their payment as part of the performance scheme. Payment of the incentive is determined on the basis of a range of criteria which include whether schedules are adhered to and the quality of the papers. Performance targets are reviewed on an annual basis and are changed to reflect performance issues from the previous series and changes in the year ahead, such as the need to produce question papers for both legacy and new specifications.

## **Appendix 4 – Edexcel**

### **Management of the question paper production process**

Edexcel has a well-developed ten-stage process for question paper development and production that is commonly understood within Edexcel. The process documentation maps the end-to-end process from commissioning the question paper and mark scheme from the principal examiner to the final despatch of printed papers to centres.

There is a clear delineation of roles and responsibilities across the organisation in relation to question paper production. There is a separation of operational project management and delivery roles from the development of question paper content and management of examiners. Edexcel have a team of content production managers who have responsibility for managing the production of the question paper and act as the “quality gate-keepers”.

There is evidence of good practice in terms of ensuring the quality of the draft question paper before it reaches the QPEC meeting. This includes using macros and templates to ensure that the preferred layout and format of the question paper is captured from the initial draft thus enabling the QPEC to review a paper that appears as close to how the final question paper will look as possible; and a peer review stage in the process where the chief examiner reviews a whole suite of draft question papers before they are sent to the reviser.

The error in the GCE AS Biology [8] question paper was introduced at the QPEC stage. Prior to the QPEC meeting, the affected question was an open-ended question and no suggestion was made by the revisers that the question needed to be made into a multiple choice question. During the meeting the question was amended and a suggestion was made to make the question multiple choice. An electronic version of the question paper was amended during the QPEC meeting. Although the amendments to the question were recorded on the electronic version of the paper no hard copy record of the content of the amended question was kept. Similarly, no record of the discussion setting out the rationale for the amendment was kept. Edexcel’s procedures indicate that the member of staff running the QPEC should “take handwritten notes for file copy”. Whilst amending the question paper on screen during the meeting has certain benefits, for example all the examiners can see what the change will look like in the final version of the question, appropriate mechanisms need to be employed to ensure there is a clear audit trail of the decisions made.

### **Quality checks**

Edexcel has proof-readers who are designated as being subject specialists. The instructions to proof-readers request that the question paper is reviewed “in respect of logic (e.g. are the instructions clear, are questions and page numbers correct and/or need amending)”. The instructions do not instruct the proof-reader to confirm

that the possible answers to multiple choice questions are correct. Furthermore, a second proof-reader checks the paper after the scrutiny stage to ensure that the final paper for sign-off incorporates the changes of the previous annotated proof. However, as this is a “like-for-like” check, only errors that had been identified in previous versions of the paper would be considered.

Edexcel’s scrutineers are instructed to first work through the question paper and answer the questions as a candidate without reference to the mark scheme and complete the first section of the scrutineer’s report form. Once this is completed they are then asked to check through the mark scheme alongside the question paper and complete the second section of the scrutineer’s report form. In the case of GCE AS Biology [8], the scrutineer did not suggest any amendments to the question which contained the error and indicated that the question was correct. As both the question paper and mark scheme are sent to the scrutineer at the same time it is not possible to establish whether the scrutineer worked through the paper without reference to the mark scheme.

Edexcel’s internal review into the errors this summer also observed that “Scrutineers are not required to submit a completed copy of the question paper with their report”. This impacts on the extent to which Edexcel can be assured that the scrutineer has carried out the required checks in line with Edexcel’s expectations.

As part of the process of approving the final version of the question for printing, Edexcel’s procedures require the chair of examiners, the chief examiner and the principal examiner to check that the question paper and mark scheme are free from error. Advance printed copies of the question papers are also checked. Although there is evidence that these checks were carried out in relation to GCE AS Biology and the paper was signed off in accordance with Edexcel’s procedures, the checks failed to identify the error.

### **Role and management of examiners**

Edexcel has a performance management system for principal examiners. Principal examiners have a performance review which is based on how many errors are found in the paper. The paper is not considered as completed until it has been successfully scanned for marking purposes. A percentage of a principal examiner’s payment for producing the question paper and mark scheme is withheld if an error is identified.



## Appendix 5 – ICAAE

ICAAE’s processes and quality assurance procedures for the production of question papers were reviewed as part of the inquiry as ICAAE is one of the awarding organisations that offer GCSE qualifications – although it did not have any reported errors that were included within the scope of the inquiry.

In their response to Glenys Stacey’s letter of 7th June to awarding organisations requesting assurance regarding the absence of errors in papers yet to be sat, ICAAE indicated that they had a minor error on one of their GCSE Business Studies papers. ICAAE stated that the error was discovered before the paper was taken and an erratum notice was sent to all centres a week prior to the examination both by email and by letter.

In response to our preliminary information request to inform the inquiry, ICAAE indicated that they had identified two errors on two of their GCSE question papers. The errors are outlined below.

<b>Specification/Component</b>	<b>Error</b>	<b>When discovered</b>
GCSE Business Studies G37 – G3702	Q1f Higher Tier – the word “stakeholders” rather than “shareholders” was used as the stem for candidates to answer.	The error was discovered one week before the paper was sat and an erratum notice was issued to centres.
GCSE ICT G43 – G4303	Q3a Foundation Tier – the question contained two incorrect references to cells in a spreadsheet which formed part of the question. This meant the question could not be answered.	The error was discovered before the paper was sat and an erratum notice was issued to centres.

We also identified during the visit to ICAAE a further error with Question 3b of the GCSE ICT paper which contained an incorrect formula. The error was identified by a centre in correspondence with ICAAE. However, ICAAE had not formally recorded this as an error and had not brought this to our attention. The centre received a standard reply from ICAAE which stated this issue would be considered at the awarding meeting.

### **Management of the question paper production process**

ICAAE’s question paper production process is outlined in the document *Examination Question Paper Production Schedule*. The document carries the CCEA as well as

ICAAE logos. This reflects the fact that ICAAE used to offer its examinations in partnership with CCEA. The original procedure document supplied to us was for the 2009 examination series. After this was queried by the inquiry team a “new” version of the document was supplied with the correct examination series although the document was identical to the previous version and still carried the CCEA logo and referred to CCEA even though ICAAE no longer work in partnership with CCEA.

The procedural document included references to those aspects of the question paper production process required by the Code of Practice and contained an indicative timeline as to when certain activities should be completed, for example: “Revisers submit report for each specification to ICAAE by November”.

The Head of Assessment is responsible for managing the question paper production process and is supported by the Deputy Head of Assessment. The roles and responsibilities of ICAAE staff were clearly defined in the job descriptions and organisational chart provided to us. However, we noted that the Deputy Head of Assessment was designated as holding three separate roles.

ICAAE indicated that it was making changes to the way it was organised, as well as changes in personnel. However, there was confusion as to who would be acting as Head of Assessment going forward and how ICAAE would ensure it complied with the requirements of the Code of Practice and other regulatory requirements.

ICAAE undertake the writing of the question papers and manage the progress of the question papers through to the production process. The layout, typesetting and printing of the papers is undertaken by an external printer.

Tracking and progress-chasing of question papers is done through a combination of telephone calls and emails and is the responsibility of one individual. However, there is no evidence of formal procedures for tracking the production of each paper.

ICAAE maintains a file for each question paper which includes amended drafts of the papers, examiners’ comments as well as revisers’ and scrutineers’ reports. A log sheet is included which indicates who has seen the paper, made amendments and when the draft paper has been sent out and returned.

It was evident from the inspection of ICAAE’s question paper production files that there were significant gaps in the audit trail and poor version control. In some cases the log sheet was not fully completed or correct. Amendments made to papers at various stages of the production process were not comprehensively tracked. ICAAE indicated that sometimes previous versions of draft question papers would be destroyed to avoid confusion and maintain question paper security.

There was evidence of question papers undergoing significant revision at QPEC, and of question papers being amended after the scrutineer had reviewed the paper. A report from the scrutineer for one of ICAAE’s GCSE Business Studies papers could

not be found on file. Furthermore, some of the revisers' reports lacked sufficient detail in order to provide ICAAE with assurance that the question paper had been properly revised.

The Head of Assessment is responsible for signing off the final version of the question papers prior to printing. Papers are not checked after printing prior to distribution to centres. ICAAE receive copies of the final printed papers at the same time as centres receive them.

## **Quality checks**

Although ICAAE did not have any errors that fell within the scope of the inquiry, there was evidence of errors occurring which indicate weaknesses in the scrutiny and proof-reading checks that are included in ICAAE's examination question paper production schedule. However, ICAAE could not identify the cause of the errors or where in the process the errors may have occurred.

Due to the incomplete audit trail and poor version control of ICAAE's question papers it was not possible for us to establish beyond doubt the causes of the errors, and whether or when particular quality checks had been carried out. However, our document analysis found the errors were present in the post-scrutiny versions of the papers. In addition, there was evidence of extensive revisions of papers after the QPEC meeting. It was also evident that the versions seen by the scrutineer had gone through further amendment. This resulted in a confused final version of the papers which included some amendments by the scrutineer and some by the chair of examiners and the chief examiner.

ICAAE indicated that no check or monitoring of their external printer's quality assurance procedures had taken place and there was an assumption that the printer had the necessary quality assurance checks in place as the printer was experienced in printing examination papers.

## **Role and management of examiners**

Person specifications exist for the roles of the chair of examiners and the chief examiner. Person specifications for the roles of reviser and scrutineer were not available despite a request during the inquiry visit.

Examiners are invited annually to undertake work as an examiner – including writing and evaluating papers – and are sent the question paper production schedule and a copy of the Code of Practice. ICAAE has a stable team of examiners which they have used for many years. However, there was no evidence of ongoing training for examiners in terms of question paper writing and it is likely that the last training took place over 14 years ago when the examining team was first appointed.

ICAAE does not have any formal processes in place to monitor examiners' performance in relation to the production of question papers and mark schemes and

it is not clear how they receive assurance that the external examining roles, in relation to question papers and mark schemes, have been completed satisfactorily and in accordance with the Code of Practice. There was no evidence of individual feedback being given to examiners, for example on the quality of drafts and adherence to timelines, even though it was stated that this was the case. Furthermore, ICAAE volunteered that they regularly had issues with one examiner who missed deadlines and often had to have their questions rewritten.

### **ICAAE's response to the errors**

The errors and the potential impact on candidates were considered at the awarding meetings. In both cases the Head of Assessment stated that the chief examiners felt that the errors had not had an impact on candidates. However, an email from one centre indicated that a candidate had been affected by the error. Furthermore, although ICAAE had issued erratum notices for the affected questions one centre had emailed ICAAE explaining that the erratum notice had not been brought to the attention of its candidates.

In the case of GCSE Business Studies, a sample of scripts was reviewed by the chief examiner who concluded that the majority of candidates had made the correction to the paper in accordance with the erratum notice and judged that no candidates had been affected by the error.

In the case of GCSE ICT, all candidates were allocated two marks for the affected question even though an erratum notice was issued.

ICAAE acknowledged that they do not have procedures for dealing with errors on papers and that all errors are handled on a case-by-case basis. There was no evidence of any further analysis – other than the inspection of scripts – of the possible impact of the errors on candidates, or any assessment of the impact of any remedial actions on the maintenance of standards.

## **Appendix 6 – OCR**

### **Management of the question paper production process**

OCR has clearly documented processes and procedures for the development of question papers which incorporate the requirements of the Code of Practice.

OCR has a question paper management team which is responsible for managing the question paper production process and facilitating the flow of material between examiners and qualification managers, developing the production schedule for each paper and monitoring the progress of the question paper against agreed timelines. Qualification managers (subject officers) manage the examiners to develop the content of the question papers in line with the requirements of the Code of Practice, and ensure the required quality checks have been completed and any issues or errors are resolved before the question paper is finally signed off.

The question paper production timelines are established against the date by which the papers need to be printed and despatched to centres. Working back from the despatch date, OCR uses critical path analysis to establish the dates by which key tasks within the production process need to be completed. Although we could find no evidence to suggest the errors were the result of pressures caused by the need to meet process deadlines, some of the staff we spoke to indicated that the production timelines can experience pinch points. The development cycle for a question paper may mean that examiners are writing and marking three different series of examinations at the same time. This in turn can make recruiting subject experts difficult; in particular practising teachers, as release from school duties is necessary to enable them to commit the time required to participate in the assessment process.

In the case of the error in the GCE AS Decision Mathematics [9] paper, the error was introduced following the revision of the paper by the principal examiner in light of comments made by the reviser. The error was not identified during the QPEC meeting or by any of the other subsequent quality checks. OCR's process requires the principal examiner to submit the first draft of the question paper and mark scheme, which is then despatched to the reviser. The reviser returns their comments on the draft to the principal examiner and the question paper management team. The principal examiner then revises the question paper and mark scheme in light of the reviser's comments. This revised draft is then sent to the QPEC members in advance of the QPEC meeting for consideration.

This arrangement means that there is limited opportunity for the chief examiner and OCR staff, including the chair of examiners, to intervene at an early stage in order to improve the quality of the paper that is presented to the QPEC.

In the case of GCE A2 Physics [10], the error was introduced following a request by the QPEC meeting to change the units used in the affected question from centimetres to metres. The primary function of the QPEC meeting is the agreement

of revisions to question papers prior to typesetting. However, in some cases the QPEC meeting is being used to substantially rework questions. This can result in time pressures and restricts the opportunity for scrutiny. Furthermore, it is not clear within OCR's procedures the point at which further evaluation of the question paper would be required due to the nature and extent of changes made at the initial QPEC meeting before the paper is authorised for typesetting.

OCR indicated that in the past the reviser saw the question paper again after the QPEC and typesetting (that is, the version of the question paper which incorporated revisions suggested at QPEC) but that this step was removed to help streamline the process.

### **Quality checks**

The errors in OCR's question papers could have been identified before the papers were printed and despatched to centres but were not picked up by the scrutineer or the proof-reading checks. In the case of GCE AS Decision Mathematics [9] and GCSE Latin [11] the errors were present in the version of the papers considered at the QPEC meeting which presented another opportunity for the errors to have been identified.

OCR initiated additional checks on question papers that had yet to be sat following our request for assurance which was issued on 7th June 2011. The errors affecting the GCSE Latin [11] and GCE A2 Physics [10] papers occurred despite the papers undergoing these additional checks. OCR's internal instructions for the additional checks required that the checks be carried out by someone independent of the question paper – not the principal examiner or scrutineer for the paper – and who had subject expertise. Checkers were required to complete a checklist for each question paper. The process involved proof-reading the questions, working and answering the questions as a candidate would and checking that the question mapped appropriately to the specification. An escalation route for any errors identified through the checking process was established.

For both GCSE Latin and GCE A2 Physics the checks were carried out by OCR staff. The GCSE Latin paper was due to be sat on 20th June 2011. Subject staff whom we interviewed stated that the request for the paper to be checked was received on 16th June 2011. This meant there was insufficient time for an external subject expert to be contracted to undertake the check. The check was therefore carried out by a member of OCR staff who did not have specific Latin expertise. The subject team indicated that the fact that the GCSE Latin paper was not checked by a subject specialist was flagged as an issue to more senior OCR staff.

### **Role and management of examiners**

The guidance and support provided to examiners and scrutineers who are responsible for checking the question papers may have contributed to the failure of

the quality assurance checks. Examiners, revisers and scrutineers are provided with task descriptors which describe what they are expected to undertake. These are supported by checklists and report forms. However, the documentation focuses on activities rather than what the intended outcome of the tasks is. There is also considerable variation in the level of detail provided for different roles. For example, revisers receive a detailed checklist of things to look for while scrutineers receive very little guidance.

There is variation in the amount of detail in the reports that examiners, revisers and scrutineers are required to complete for each stage of the process; for example, whether the scrutineer is expected to submit a worked version of the question paper. The lack of clarity regarding the evidence that examiners and scrutineers are required to provide impacts on the extent to which OCR can be assured that a process has been completed satisfactorily and in line with its expectations.

There is evidence of individual subject teams considering the training needs for their examining personnel but there is no systematic evaluation of the training and guidance necessary to ensure that each of the key roles in the question paper production process are carried out in line with OCR's expectations and in accordance with the Code of Practice. Each subject area goes through a "lessons learnt" process at the end of the examination series but there is not a formal mechanism for sharing good practice and learning points more widely across the organisation.

## **GCE AS ICT (G062)**

In addition to the question paper errors outlined in the interim report, we also looked into a complaint concerning errors in the mark scheme of a GCE AS ICT unit (G062). The unit comprises a practical task in the use of ICT. The unit was taken by 6,185 candidates in 360 centres.

Each year a new set of structured tasks is created by OCR in order to assess unit G062. The new tasks are made available to centres at the beginning of each academic year. Candidates may take the tasks during the academic year between September and May.

The tasks are assessed by teachers (centre assessors) who assess their candidates' work against the OCR-provided mark scheme.

In order to guard against malpractice, the mark scheme is not made available until after the final date for entries on 21st March. Centres have the remainder of March, April and the first half of May to complete their assessment of their candidates' work.

Four errors were identified in the mark scheme provided to teachers in March 2011. There were no errors in the actual structured tasks provided for candidates. The mark scheme reflects the outputs expected from candidates as a result of their completion

of the structured tasks. It identifies the outputs and identifies the number of marks to be assigned to each of these.

Two errors related to areas of the mark scheme for Task 6 that identified the results required from candidates, but based on only one possible interpretation of the instructions in the task. The mark scheme did not take into account other possible interpretations of the instructions. The other two errors were accuracy errors relating to Task 4.

OCR first became aware of concerns relating to the two errors concerning the possible interpretations of the instructions in the Task 6 mark scheme through email correspondence received on 30th–31st March 2011. We also received complaints in June 2011. In view of these complaints we wrote to OCR requiring a full explanation as to how the errors were being dealt with and how OCR would ensure that no candidate would be advantaged or disadvantaged by the errors.

The draft structured tasks and mark scheme were reviewed by the QPEC in November 2009. In addition to the chair of examiners, the qualifications manager, the principal moderator and the reviser, the QPEC also includes centre representatives. At QPEC, changes were made to both the tasks and the mark scheme. The post-QPEC version of the paper and mark scheme was sent to two scrutineers. A number of recommendations for changes to the tasks were made at this point. In line with the requirements of the Code of Practice, the chair of examiners requested an additional meeting in June 2010 to review the tasks. OCR state that the focus of this meeting was on the structured tasks rather than the mark scheme.

No further changes were made to the tasks once they were signed off for print. The finalised tasks were then made available to centres in September 2010. Due to the nature of the unit, OCR convene an additional mark scheme review meeting. This was held in October 2010, after the tasks had been issued to centres. This meeting includes the principal moderator and five teacher representatives from schools delivering the specification. The purpose of the meeting is to consider, in light of candidate responses to the tasks and teachers' experience, any amendments to the mark scheme that may be needed. In light of this meeting, amendments were incorporated into the version of the mark scheme that was issued to centres in March 2011 to enable teachers to commence their marking of the tasks.

The two errors concerning possible interpretations of the instructions to candidates in Task 6 came to light at the end of March 2011. This was reasonably early in the period within which teachers had to mark the tasks. However, OCR decided not to issue a mark scheme addendum to centres. Instead, OCR decided to handle these errors at the moderator standardisation meeting. Factors which influenced this decision included:

- the nature of the errors and the number of marks involved



- the position of the errors within the paper and the number of candidates that would have completed the affected elements of Task 6
- possible impact on centres having to re-mark work against the amended version of the mark scheme
- the potential confusion caused by having two versions of the mark scheme in circulation and the difficulty of establishing which version of the mark scheme had been used by centres.

However, OCR did issue an addendum to the mark scheme and instructions to centres on 1st July 2011. OCR accept that it would have been better to issue an addendum as soon as the two errors relating to Task 6 came to light.

The two accuracy errors came to light at the standardisation meeting for moderators which took place on 27th and 28th April 2011. The first accuracy error in the mark scheme was introduced at the first QPEC meeting held in November 2009 when changes were made to the task but were not reflected in the mark scheme. The second accuracy error was present in the mark scheme after the first QPEC meeting.

The errors occurred despite the question paper and mark scheme having gone through two QPEC meetings, being sent to two scrutineers and being considered at a mark scheme review meeting which included teacher representatives. It is evident that there was a lack of clarity regarding what specific outputs were expected from the scrutineers and members of the mark scheme review meeting, in particular in relation to producing worked outputs to the tasks.

## **Appendix 7 – WJEC**

### **Management of the question paper production process**

WJEC has clearly documented processes and procedures for the development and production of question papers. WJEC's production of question papers is planned on the basis of 100 per cent of standard format question papers being produced in-house. This includes design work, typesetting and the final printing of the papers. Third-party suppliers are used occasionally to supplement in-house production capacity and for some of the modified question papers produced for candidates of WJEC examinations.

WJEC use a computer-based question paper management system which tracks the life cycle of the question paper from first draft to final print. The system generates a specific list of actions for individual staff members to follow with regard to their specific role in the question paper process. Detailed records of each stage of the development of the question paper are provided to ensure the awarding organisation has a comprehensive audit trail. The key production dates for each paper are programmed into the system which in turn generates alerts if deadlines have not been met as well as other management information regarding the question paper production process.

For all subjects except Welsh (first language and second language), the question paper development process starts with the drafting of an English-medium version of the question paper. Once an updated draft is available following QPEC, the preparation of the Welsh-medium version of the question paper is able to commence (a Welsh-medium version is required for almost all question papers produced by WJEC, other than where the subject area is English).

The processes leading to the finalisation of both English-medium and Welsh-medium versions of the question paper proceed in parallel, through to the final proof stage. The preparation of Welsh-medium versions of papers provides in effect a further element of review which contributes to the early detection of any errors and identifies where improvements to the wording of questions may be needed.

The error within the scope of the inquiry related to a modified large-print version of the GCE A2 Mathematics question paper for unit C3 [12]. In addition, the inquiry considered an error in the modified large-print version of the GCSE Chemistry 2 paper as well as instances where errors were discovered before the examination and an erratum notice was issued to centres.

For both GCSE Chemistry and GCE A2 Mathematics the errors were introduced during the modification process. For Mathematics, the paper was modified in-house whilst the Chemistry paper was modified using a third-party specialist provider.

WJEC in its internal inquiry into the errors considered the impact of late applications for modified papers made by centres to see if there was any connection between an application being received late and the appearance of errors in a modified paper. In the case of the GCE A2 Mathematics [12] question paper where the error occurred, the request for a large-print modified version of the question paper was received within the specified deadline. However, WJEC did identify that approximately 28 per cent of requests for modified versions of GCSE and GCE AS and A2 level papers were received after the specified deadline. WJEC has a policy of honouring late requests for modified versions of question papers. However, modifying and printing papers within a short time frame inevitably increases the risks of errors being introduced at a late stage.

### **Quality checks**

There was evidence of robust quality assurance measures being employed. For example, in relation to the printing which WJEC undertakes in-house, quality inspection records are completed for each print job and electronic and manual systems are used to check for any mis-collation of question papers. Furthermore, a batch of 20 printed papers is sent to the subject officer, the principal examiner and the reviser for certification prior to the despatch of question papers to centres.

For GCE A2 Mathematics the “P” proof version of the modified large-print paper produced in-house by WJEC included the error. The formulae in the original version of the paper are embedded as separate digital objects within the electronic text. These digital objects are not scalable through an enlargement process, therefore the formulae have to be re-keyed into the modified version of the paper. The error in the large-print proof was identified at the proof-reading stage but no amendment was made to correct this, so the error remained present in the “R” revised proof version of the modified large paper. Crucially, a second error was introduced on the “R” version of the paper even though there was no evidence of any manual amendments being made to this part of the paper between the “P” and “R” versions. The error was not identified before the paper went to print.

For GCSE Chemistry, the error did not exist when the paper was sent to the external agency for modification. WJEC’s records show that the external agency sent the modified paper back to WJEC on 16th May and that the subject officer had seen a proof on 9th May. Currently the external agency only returns the final version of the modified paper to WJEC, with all previous proofs being destroyed. Although the external agency proof-reads the papers, WJEC cannot verify whether the subject officers amendments had been made.

Although the error in the GCSE Chemistry paper occurred during the production of the modified version of the paper, that is, after the standard version of the question paper had been signed off for print, it was evident from the review of the question paper production file for GCSE Chemistry that the scrutineer had been brought in too

early to check the paper, having been given a “P” copy of the paper rather than the later “R” version. The scrutineer did not, therefore, work on a “near final” version of the paper and there were amendments to the question paper after the scrutineer submitted their report.

### **Role and management of examiners**

In GCE A2 Mathematics WJEC employ a “worker” at an early stage of the question paper development process to work the solutions to the questions. WJEC added that recently it has become practice to involve a second worker. WJEC stated that the worker was in addition to the scrutineer. Although the use of a worker to address some of the specific risks associated with development of mathematics papers can be considered as good practice, there was no evidence available to show that a scrutineer (as required by the Code of Practice) had checked the paper. WJEC therefore needs to ensure the different roles of the worker and the scrutineer are clarified.

Scrutineers are required to complete a checklist confirming they have checked the paper. However, the level of detail provided in some scrutineer reports can only provide WJEC with limited assurance that the paper has been satisfactorily checked.

## **Appendix 8 – Information requested from awarding organisations**

Awarding organisations were asked to provide the following information in advance of the inquiry team visits. Additional information was also requested during the visits.

### **General**

1. A current organisation chart showing the roles and responsibilities in relation to question paper and mark scheme production.
2. Data on the number of question paper errors identified in the 2009, 2010 and 2011 winter and summer examination series including:
  - (a) question papers replaced before or during the examination series
  - (b) question papers where errors were identified after the question paper was printed but before the commencement of the examination e.g. where it was possible to issue an erratum slip or give oral instructions to candidates but was not possible to replace the paper
  - (c) question papers where errors were not identified prior to the commencement of the examination.
3. Data on the number of candidates affected by any question paper errors in the summer 2011 examination series, including a breakdown of candidates in Wales and Northern Ireland.

### **Procedures**

4. Documentation, including process maps, detailing the end-to-end process for the production of question papers and mark schemes.
5. Operating procedures relating to the production of question papers and mark schemes – including printing and distribution.
6. Question paper production files for those question papers where errors were discovered including:
  - (a) drafts of the question papers (including source material)
  - (b) revisers' comments
  - (c) minutes of Question Paper Evaluation Committee meetings
  - (d) scrutineer's report

- (e) record of any changes made to the draft question paper/mark scheme and when they were approved
- (f) final version of the question paper and mark scheme as approved by the chair of examiners/awarding organisation officer
- (g) print proofs of question papers (and where appropriate source material) including any proof-reading comments/mark up
- (h) details of any late changes made to the question paper
- (i) correspondence concerning the printing of the question paper

### **Quality assurance and risk management**

7. Quality assurance/control documentation maintained by the awarding organisation and any third-party suppliers in relation to question paper production (including printing and distribution).
8. Details of the reporting, management and risk escalation arrangements between the awarding organisation and its third party suppliers, i.e. printers.
9. Contingency plans for handling question paper errors, in particular errors discovered after question papers have been distributed to centres.

## **Appendix 9 – Call for written evidence**

1 August 2011

To: All External Stakeholders

Dear Colleague

### **The Qualification Regulators' Inquiry into Examination Errors – Call for evidence**

As you may be aware, during the summer 2011 examination season a number of errors in a small number of GCSE, AS and A level question papers were identified. In view of the serious nature of these errors, the qualifications regulators in England, Wales and Northern Ireland (Ofqual, DfES and CCEA) have launched an inquiry. The purpose of the Inquiry is to:

- (a) establish the facts and ascertain the root cause of the errors
- (b) consider how effectively the awarding organisations have communicated with candidates, centres and other stakeholders
- (c) identify any improvements necessary in awarding organisations' procedures
- (d) consider the arrangements for risk management and redress that should be used in the future and any implications for the regulatory arrangements to hold awarding organisations most effectively to account.

The full terms of reference for the Inquiry can be found on Ofqual's website <http://www.ofqual.gov.uk/files/2011-07-08-exam-errors-inquiry-tor.pdf> . Details of the question papers affected can also be found on Ofqual's website.

I am writing as part of the Inquiry to invite your organisation to submit written evidence. In particular, we would welcome evidence in relation to the following issues:

- (a) how and when the errors first came to light
- (b) how the errors were dealt with by centres and any instructions given to candidates during the examination at the point the error was discovered
- (c) how candidates dealt with the errors and the impact the errors had on them during the examination.
- (d) the effectiveness of the awarding organisations' communications including:

- a. instructions for conducting the examination once an error with a question paper had been discovered, and details of any remedial actions to be taken in relation to affected candidates
- b. communications with affected candidates and centres after the errors had been identified
- c. details of the measures being taken to ensure candidates were not being unfairly disadvantaged or advantaged by the errors
- d. arrangements for UCAS applicants who had taken an affected paper(s).

I would like to emphasise that this inquiry is separate to the activities which the awarding organisations are undertaking and which the regulators are overseeing, to make sure that candidates who have faced examination paper errors this summer are, as far as possible, not unfairly disadvantaged or advantaged. The purpose of the inquiry is not to investigate individual cases of candidates who may have been affected by the errors, nor does it replace the existing Special Consideration and Enquiries about Results arrangements operated by the awarding organisations.

In order to inform our emerging findings report, if you would like to submit evidence please send it to [examsinquiry@ofqual.gov.uk](mailto:examsinquiry@ofqual.gov.uk) by 23 September 2011.

The regulators recognise the importance of lessons being learnt in time for the next major series of examinations and the fact that awarding organisations have already set papers for the January 2012 examinations. The intention therefore is that an interim report on emerging findings will be published by the end of October 2011 with the intention of informing any shorter term further action necessary to secure the quality of examinations being taken in 2012.

Yours sincerely

**Emma Cochrane**

Inquiry Lead – Head of Economic Regulation  
Direct line 02476 671870



## **Appendix 10 – Respondents to the call for evidence**

Association of Colleges

Association of School and College Leaders

Chartered Institute of Educational Assessors

Examination Officers' Association

Federation of Awarding Bodies

Grammar School Heads Association

Joint Council for Qualifications

National Union of Students

National Union of Teachers

Universities and Colleges Admission Service (UCAS)

VOICE

## **Appendix 11 – Summary of main issues raised by stakeholders**

We sought feedback from a range of stakeholders. In particular, stakeholders were invited to comment on the effectiveness of the awarding organisations' communication and the redress mechanisms that were implemented to ensure that, as far as possible, no candidates were unfairly advantaged or disadvantaged by the errors. The following key issues and suggestions of points worthy of further consideration have been identified.

Many respondents felt the number and nature of errors in question papers that occurred in summer 2011 was unacceptable and had the potential to undermine public confidence in the examination system as a whole.

The impact that the errors had on candidates during the examinations falls into two distinct – but not mutually exclusive – categories: impact on apportioning of time to each question, and impact on general state of mind and concentration. Some students reported a sense of having wasted time on an incorrect question at the expense of other sections of the examination. Other students said they were afraid of failing the entire examination, and that this had a hugely negative effect upon their ability to perform.

Concerns were raised regarding clarity about the actions that centres are expected to take when an error is discovered during an examination, and the advice which should be issued to candidates. The responses suggest that the approach adopted by centres for handling the errors was not always consistent. For example, some centres may have allowed extra time whilst others provided reassurance to candidates that they would not be disadvantaged by the error. Organisations representing students noted that candidates did not always receive instructions on how to deal with the error during the examination and were not always provided with reassurance about how the issue would be dealt with. Also, some centres reported that they did not always find it easy to contact the awarding organisation to speak to someone who understood or could deal with the issue and get advice on what action to take.

The actions the awarding organisations took to ensure that, as far as possible, candidates were not unfairly advantaged or disadvantaged as a result of the errors are a key focus of the responses. The significant effort that was put in place to mitigate the negative impact of the errors is generally acknowledged. However, there was disagreement between respondents as to what the most appropriate redress approach should have been. One respondent expressed concern that in relation to some of the errors the redress mechanisms implemented by the awarding organisations may have disadvantaged stronger candidates and advantaged weaker ones.

In general, respondents indicated that that they were satisfied that the affected candidates had received appropriate grades, and no significant concerns were raised by centres or candidates regarding the results for the affected papers.

Respondents felt that awarding organisations were efficient in informing centres of the steps they take would in relation to the questions containing errors. However, the overly technical nature of the awarding organisations' communications regarding redress measures was highlighted as a potential barrier to ensuring public confidence.

Some respondents felt that there should be a more standardised approach adopted by awarding organisations for dealing with the errors, for example, by automatically discounting the question and applying special consideration to all affected candidates rather than relying on centres to apply. Examinations officers pointed out that the process of applying for special consideration for individual students or groups of students was both costly and time-consuming, and created an additional workload even though the problem was not of their making.

Organisations representing students felt the awarding organisations could have done more to communicate directly with candidates regarding the nature of the errors and the steps being taken to mitigate the impact. They also point to a possible disconnect in communication between awarding organisations and centres, and between centres and candidates. Students' varying levels of confidence in their centres' ability to accurately communicate the impact the errors had on students and the remedial measures being implemented by the awarding organisations was also reported. For example, some students said that they had been informed by their centres that the errors would be taken into account in their final mark but were not given any further details as to how this would work in reality.

Groups representing students were particularly concerned about the potential impact of the errors on those students who had applied to university. The National Union of Students (NUS) indicated that following meetings in July 2011 with Ofqual and with UCAS, Universities UK and representatives of the awarding organisation they requested that a "flagging" system be developed in order to alert UCAS and university admissions departments in situations where students may be adversely affected by errors. However, the NUS were not confident this was followed through with UCAS.

UCAS, in their evidence, indicated that there was regular contact between Ofqual and UCAS after the errors were discovered. UCAS received details of candidates who had been affected by the errors from two awarding organisations but no further contact was received from the awarding organisations. UCAS attempted to match candidate details with UCAS applicants to provide numbers of candidates affected but did not feel any further action could be taken without causing an increased risk to the operation of its Confirmation and Clearing process. UCAS was surprised at the

limited contact it had from awarding organisations as they have close operational contacts with all the awarding organisations for processing of results and general enquiries. However, errors in examination papers was not cited as a reason for any significant number of calls during August when results had been published.

UCAS appreciated the contact with Ofqual and the details provided on the actions being taken but felt that our remit was at times unclear which caused some confusion and concern about the management and ownership of risk.

One respondent felt that there had been a noticeable increase in the number of erratum notices issued by awarding organisations. They queried whether the issuing of erratum notices was always appropriate, and suggested that erratum notices potentially confuse most those students who are anxious and under-confident.

Two respondents commented on the possible impact that the use of non-teaching invigilators may have in terms of the time taken to identify errors and the advice and reassurance that can be provided to candidates sitting the examination so as to minimise any anxiety that may be caused by an error. Additional training and guidance for invigilators on how to handle errors should they occur was suggested; as well as a review of the processes and practices of informing centres of errors and the remedial action being taken.

Two respondents suggested that, in light of the nature and number of errors that occurred in the summer, the process by which question papers are developed should be reconsidered. Suggestions included: having teams of item (question) writers to develop “banks” of questions that can be used for a particular paper rather than the question paper being written by one principal examiner; pre-testing questions before they are using in a live examination environment, and improved training for question writers and scrutineers.

## **Appendix 12 – Actions taken by the regulators in response to the examination errors**

During the examination period we initiated a range of actions. The main purpose of these actions was to ensure that candidates, parents, centres, higher education institutions (HEIs) and other stakeholders could have confidence that everything that could be done had been done to make sure that, as far as possible, the risk of further live errors was reduced and candidates were not unfairly disadvantaged by the errors. A summary of the actions taken is provided below.

- 7th June 2011 – We required each awarding organisation offering GCSEs and A levels to carry out additional checks on the examinations yet to be sat and to provide written assurance to us by 13th June that these checks had been undertaken.
- Following the discovery of further errors after assurances had been received from the awarding organisations, we met the Chief Executives of all the awarding organisations to again ask for confirmation that there would be no more avoidable errors and took additional measures in relation to one awarding organisation.
- 22nd June 2011 – We issued a statement on our website to provide assurance that, as far as possible, candidates would not be unfairly disadvantaged or advantaged by the errors. The statement also provided guidance to candidates on what to do if they felt their performance may have been affected by the errors.
- 1st July 2011 – We launched an inquiry into the examination errors.
- 7th July 2011 – We met with the National Union of Students (NUS), Universities and Colleges Admissions Service (UCAS), Universities UK (UUK) and Supporting Professionalism in Admissions (SPA) to give student representatives and the admissions community an opportunity to express their concerns and needs as they prepared for the publication of A level and GCSE results in August.
- We maintained regular contact with UCAS and HEIs. We also provided them with detailed information regarding which GCE AS and A2 papers were affected, and the redress actions that the awarding organisations had implemented in response to the errors.
- During July and early August we oversaw the actions that each awarding organisation was taking in relation to the errors and on 5th August 2011 we issued a statement confirming we were satisfied that everything that could be done had been done to make sure that, as far as possible, candidates had not

been unfairly advantaged or disadvantaged and that there was a level playing field. We also published a message to HEIs at the same time.

- 9th August 2011 – We published a message to candidates, parents and centres ahead of the publication of results to explain the actions we and the awarding organisations had taken; to provide reassurance regarding the fairness of grades; and to provide advice on the action candidates should take if they were unhappy with their grades.

The awarding organisations and their representative body, the Joint Council for Qualifications (JCQ), also issued their own statements as well as details of the redress actions they had implemented.

## **Glossary**

**Awarding organisation** – an organisation recognised by us for the purpose of awarding regulated qualifications

**Centre** – an organisation (such as a school or college) undertaking the delivery of an assessment to candidates on behalf of an awarding organisation

**Chair of Examiners** – an individual responsible to the awarding organisation for maintaining standards across different specifications in a subject within a qualification and from year to year

**Chief Examiner** – an individual responsible to the Chair of Examiners for ensuring that the examination as a whole – including both internal and external assessment – meets the requirements of the specification and maintains standards from one year to the next. The Chief Examiner also acts as a Principal Examiner or moderator for at least one component

**Enquiry about result** – a process through which an awarding organisation may be asked to check one or more of the steps leading to a reported result

**Examiners** – individuals with subject expertise who are responsible for marking candidates' responses

**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 or tasks or parts of questions or tasks and identifies the amount of credit each attracts

**Principal Examiner** – an individual responsible for the setting of the question paper or task and the standardising of its marking

**Question Paper Evaluation Committee (QPEC)** – a committee, normally chaired by the chair of examiners, which awarding organisations must convene to evaluate draft question papers/tasks. The committee seeks to ensure that the challenge and level of demand of the question papers/tasks and mark schemes are maintained from one series to the next, referring, as appropriate, to previous years' question papers/tasks and mark schemes where these exist. The committee also ensures that the question papers/tasks and provisional mark schemes meet the requirements of the assessment criteria as set out in the specification and that they are of consistently high quality.

**Reviser** – an individual responsible for providing written comments on early drafts of question papers or tasks and provisional mark schemes

**Scrutineer** – an individual responsible for checking the final drafts of all question papers and tasks without reference to the mark scheme to ensure that the questions can be answered in the time allowed and that there are no errors or omissions

**Special consideration** – procedures that may result in an adjustment to the marks of candidates who have not been able to demonstrate attainment because of temporary illness, injury, indisposition or an unforeseen incident at the time of the examination



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First published by the Office of Qualifications and Examinations Regulation in 2011.

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