

Regulatory impact assessment on our consultation on revised arrangements for GCSE (9 to 1) computer science



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Introduction

Between 27 November and 22 December 2017, we consulted on our proposals to change the assessment arrangements for GCSE computer science to address evidence that the rules that the exam boards had set around the non-exam assessment were not being met.

GCSE (9 to1) computer science will be awarded for the first time in summer 2018. The qualifications were designed so that 80 per cent of the marks for the qualifications were allocated to exams and 20 per cent to a non-exam assessment (NEA). For their non-exam assessment students would complete under controlled conditions a task set by their exam board. The exam boards each required that the task is completed in no more than a total of 20 hours.

We were aware of the potential for malpractice in the qualification and the importance of maintaining confidence in the qualification, which counts as a science in the government's accountability measures. Our decision, taken in 2014, to allow non-exam assessment in the qualification was finely balanced.

Under Condition 2.3 of the *GCSE Subject Level Conditions and Requirements for Computer Science*¹ we required the exam boards to take extra steps to deter and detect malpractice in the new qualification. They believed the steps they had put in place would allow them to protect the integrity of the qualification and confidence in it.

Through the Joint Council for Qualifications, the four exam boards worked together to agree a significant package of controls, to include:

- statistically targeted additional moderation checks
- a larger initial moderation sample size, and lower tolerance applied to centre-assessed marks
- centre visits by exam board appointed monitors to review compliance with the specification rules
- enhanced training for moderators on the detection of malpractice
- the requirement that each head of centre signed a declaration form stating that all rules and procedures had been followed correctly

¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/427399/gcse-subject-level-conditions-and-requirements-for-computer-science.pdf

These controls were designed to ensure compliance with Ofqual Condition GCSE (Computer Science) 2.3 and followed extensive collaboration between the boards in light of the risks that the NEA in computer science represented.

The content of the NEA for 2017/18 was released by the exam boards on 1 September 2017 but, within a short space of time, the content was being discussed on internet forums and solutions to the coding element of the NEA were readily available.

The speed with which the tasks appeared on-line and the number of times the discussions and solutions were viewed threatened the integrity of this aspect of the qualification. In addition, and partly because of the extra safeguards the exam boards had put in place to prevent malpractice, we heard from stakeholders that some teachers were finding the non-exam assessments difficult to manage (they were not permitted to discuss the tasks with colleagues outside of their own centre, for example).

Revised assessment arrangements

With the validity of the NEA aspect of the new qualification potentially compromised, we consulted on a short-term solution to be implemented for the summer 2018 and 2019 examination series, with a long-term solution being put in place for subsequent sittings.

The 2018/19 solution means the NEA project will still need to be undertaken by learners, but will not count towards the final assessment; this being solely reliant upon the end of course examinations. Exam boards will collect a sample of work from every centre and review these samples to determine whether the work plausibly represents 20 hours of work at the appropriate level. They will not, however, be required to externally moderate the NEA. Teachers would not formally² have to mark students' tasks, although they may do so to provide feedback to students.

We have not yet decided on the assessment arrangements for the qualification that will apply to students taking their exams after 2019. While we understand that teachers and exam boards need time to prepare for any longer-term changes, and students should know what to expect from a qualification, we want to make sure we take the right decision for the future. We will take into account the ideas put forward in response to the consultation and consult on a preferred approach before we decide on arrangements for 2020 and beyond. If appropriate, we will extend the 2018/2019 approach to 2020.

² Formal marking of students' work involves the application of the published mark scheme available in each exam board's current specification. Teachers may choose to continue to use these mark schemes, but may also wish to employ a different approach to assessing students' work to support the feedback they give.

Impact assessment

The consultation on the revised arrangements asked respondents (including the four boards that offer GCSE computer science) whether they thought that the changes would reduce the burden on schools, colleges and exam boards. Three of the four exam boards agreed that it would, assuming that the process for verifying completion of the NEA was not too onerous. The fourth accepted that it would reduce burden in the longer term, but was concerned that the costs of communication of the changes and changes to IT systems to accommodate the revised assessment structure may off-set this reduced burden in the short term.

Teachers will not formally have to mark their students' work and exam boards would not, therefore, have to moderate that marking. While exam boards will need to monitor schools to make sure students are being given opportunities to undertake a task, based on the feedback which they provided us with in the consultation we still believe that this will represent a net saving for the boards. This is because the costs of this monitoring will not be greater than those they would incur from moderation plus the costs they would incur looking for evidence of malpractice, investigating where such evidence is found and then applying appropriate sanctions to students, schools and/or teachers (and dealing with any appeals against sanctions).

We recognise that schools and their teachers have incurred costs administering and preparing to mark the non-exam assessment. While these costs cannot be recovered, many teachers suggested in the consultation responses that their workload will reduce if they do not formally have to mark the assessments. Some respondents suggested they would seek a refund of part of the entry fee from their awarding organisation (where they have already made entries) or a reduction in entry fee (where they have not) on the basis that an element of the qualification has been removed – but as the entry fee for GCSE computer science and other EBacc science subjects is the same, and moderation is not an identifiable charge within the cost of a GCSE entry, we decided to exclude this from our estimate of likely costs.

We believe that, overall, our preferred approach would lead to a net decrease in costs and a reduction in burden for exam boards and for schools.

Although we are not bound by the Department for Education's Protocol for changes to accountability, the curriculum and qualifications, we have taken account of the Department for Education's commitments in response to the 2014 Workload Challenge: to introduce minimum lead in times for significant changes to; and to do more to consider the impact on schools when introducing such changes.³ This

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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/594215/DfE_Protocol_-_Feb_2017.pdf

protocol recognises that urgent changes might on occasion be needed, for example to address a specific problem within the system. Our decision, which does not change the curriculum or school accountability measures, is being taken to secure the integrity of the qualification award and maintain public confidence.

Our estimate of the costs of our preferred option is presented in Appendix A.

Appendix A: Headline facts and figures

N.B. – The need to develop and implement our immediate solution within a short period of time has meant that it has not been possible to fully test our assumptions with stakeholders. Instead these are based on internal and external expertise, and information we hold from previous consultations. Whilst we consider all of these assumptions to be reasonable, we will revise these in light of any further evidence we receive.

Number of candidates in 2017, assumed similar for 2018:	71,500
Number of schools, based on 46% of total (per Royal Society report ⁴):	2,630

1. Removal of requirement for internal moderation and administration

Assume, based on internal expertise, that internal moderation and administration entailed in recording a formal mark for NEA submission by Centre takes 15 minutes per learner. We have not included the removal of the need to formally mark the NEA in this calculation as teachers may choose to use the NEA as an opportunity for formative feedback (which we recognise would be good practice), which some consultation respondents indicated might take more time than formal marking, and some suggested would take less.

71,500 learners x 15 minutes = c.18,000 hours x £28⁵

Saving across 2,630 schools = £500k per annum across 2,630 schools

Recognising that some centres will have already marked the task, we have not factored this into our estimate of savings for 2018 – although we have included it as a saving for 2019, when all teachers will be aware that they will not be required to formally mark the NEA and undertake the associated administration

There will be some savings in terms of internal moderation and administration in 2018 for those centres which have not already marked the NEA. This will be less than £500k, but we have not attempted to quantify this definitively as schools will be in different positions – some who will have already marked the NEA, some will be part way through, and some will be yet to begin it.

⁴ <https://royalsociety.org/~media/policy/projects/computing-education/computing-education-report.pdf>

⁵ 2016 Annual Survey of Hours and Earnings: Secondary Education Teaching Professional [2314] plus 20% on-costs.

2. Removal of need for external moderation of NEA

The minimum moderation sample for computer science is six NEA submissions from each Centre. Assume that each review takes 45 minutes. This is an estimate based on internal subject expertise which we published as part of a previous regulatory impact assessment, and which we believe to be reasonable in the absence of feedback to the contrary.

Reduced Exam Board Moderation Cost = $2,630 \times 6 = 15,780$ reviews \times 45 minutes = 11,835 hours

11,835 hours \times £28⁶ = £331k per annum across four exam boards. We note entries are not evenly distributed across all exam boards.

3. Reduced seniority of exam board moderators for centre visits

This would be dependent upon the exam boards choosing to relax their rules around the administration of the NEA, something we suggested they might consider in the consultation. However, exam boards have yet to indicate whether they would do so.

We estimate that exam boards will visit at least a quarter of their centres this year, with each visit lasting approximately half a day. This assumption is based on information provided by one of the boards, and published guidance from JCQ on managing the NEA⁷.

660 school moderation visits per year = 330 person-days

Current Senior Moderator cost = £37⁸ per hour, £280 per day

Revised Monitoring cost = £28⁹ per hour, £210 per day

Reduced exam board cost = £70 per day \times 330 person-days = £23k per annum across all four exam boards.

4. Alterations to exam systems

Changes necessary to remove the NEA element from the qualification marking and use only the examination marks to generate the learner result.

⁶ 2016 Annual Survey of Hours and Earnings: Secondary Education Teaching Professional [2314] plus 20% on-costs.

⁷ This link is to the OCR website, but published by JCQ on behalf of all of the exam boards: <http://www.ocr.org.uk/Images/402233-gcse-computer-science-nea-monitoring-visits.pdf>

⁸ 2016 Annual Survey of Hours and Earnings: Senior Professionals of Education Establishments [2317] plus 20% on-costs.

⁹ 2016 Annual Survey of Hours and Earnings: Secondary Education Teaching Professional [2314] plus 20% on-costs.

These will be very much dependent upon the bespoke systems used by each exam board. Two exam boards did not mention this as an impact, one stated it would offset the savings from moderation (estimated above at circa £80k per exam board) and one stated it would “require significant systems development in short order”.

Assume, based upon the consultation responses and internal expertise, one-off IT redevelopment cost across the exam boards lie somewhere between £20k and £80k per board and totals £200k across the four.

5. Communication to centres to confirm revised assessment arrangements

Costs will be incurred, some of which will fall on exam boards, but these are expected to be small. The boards may choose to communicate jointly via content developed centrally by the Joint Council for Qualifications, reducing costs further.

Ofqual will also be communicating directly with schools, and through them with pupils, to confirm the revised assessment arrangements.

Overall Impact

The net impact of the changes outlined above is estimated at:

At least £150k+ in 2018¹⁰

Approximately £800k in 2019

Up to £500k potential savings for schools in 2019 from the removal of the requirement for internal moderation and administration (Impact 1). The savings will be less in 2018 where schools have already undertaken the original NEA process, but there will still be some for those yet to undertake the internal moderation and administration entailed in recording a formal mark.

Up to £150k net saving in 2018 for exam boards (Impacts 2, 3, 4 & 5).

£300k net saving in 2019 for exam boards (Impacts 2 & 3).

Regulatory impact from 2020 onwards may be greater or less, depending on the long-term approach which we decide upon for assessing this qualification. However we will consult the exam boards and other stakeholders before these long-term arrangements are put in place, giving them an opportunity to indicate costs. We would produce a further regulatory impact assessment at this time.

¹⁰ Increasing dependent on the number of schools yet to record a formal mark for the NEA.

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