Decisions on GCSE computer science assessments regulated by Ofqual

Contents

This document relates to GCSE computer science qualifications regulated by Ofqual and taken primarily in England. It does not include those GCSEs that may be taken in schools and colleges in other parts of the UK and that are regulated by either CCEA or Qualifications Wales.

Introduction

In this document we set out our decision to change the assessment arrangements for GCSE computer science to address evidence that the rules for the non-exam assessment are not in all cases being met. Our decision was informed by the responses to the consultation that we ran from 27 November to 22 December 2017.

We have decided that all students taking their GCSE computer science exams in 2018 and 2019 should continue to complete one of the tasks set by their exam board for the qualification. Their grades for the qualification will, however, be determined by their performance in their exams alone.

Background

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. For their non-exam assessment students would complete under controlled conditions a task set by their exam board. The exam boards, which set the rules for the conduct of the task, 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.

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.

During 2017, incidents of detected malpractice in the legacy GCSEs in the subject[1] rose sharply. [2]

During autumn 2017, we saw evidence that the rules for the GCSE (9 to1) computer science non-exam assessment tasks were being broken. The tasks had been released by the exam boards on 1 September 2017, for completion by students taking their exams in summer 2018. The tasks should not have been discussed outside of the controlled conditions under which they were completed. However, the tasks, which students had to complete by March 2018, quickly appeared, in full or part, on-line and were widely discussed, advice offered and solutions developed.

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).

We considered whether we should intervene or wait to see whether the integrity of, and confidence in, the qualification could be protected through an increased focus by

---

[1] GCSEs graded A* to G in computing and computer science that were awarded for the last time in 2017.

[2] https://www.gov.uk/government/news/malpractice-for-gcses-as-and-a-levels-2017

the exam boards on detecting and dealing with malpractice. We discussed our concerns with the exam boards and provided them with evidence the rules were being breached. Some of the exam boards shared our concerns; others thought the extra safeguards they had put in place would make sure they could identify where the rules had been broken. While it is always undesirable to change the assessment arrangements for a qualification for which students are already being taught, we were so concerned that the outcomes of the qualification would be unfair to many students we decided to consult on changing the assessment arrangements with immediate effect.[3]

In our consultation we proposed the following arrangements should apply for students taking their GCSE computer science exams in 2018 and 2019:

- Students' grades must be based on their performance in their exams alone. The exams must continue in the form exemplified in the exam boards' sample assessment materials.
- Schools[4] must give their students an opportunity to undertake the non-exam assessment tasks set by their exam boards and set 20 hours aside in the timetable to allow them to undertake the task. Exam boards must receive from each school a statement confirming they made such provision. This would make sure that all students have had an opportunity to develop the skills and apply their knowledge and understanding of the subject and go some way to making sure all students have a similar experience, regardless of whether they had yet to start, were part way through, or had completed the task when the changed arrangements were introduced.
- Teachers would not formally[5] have to mark students' tasks, although they may do so to provide feedback to students.

We also sought views on the assessment arrangements to be used for the longer term – ie for students taking their exams from 2020 onwards.

We received 2556 responses to the consultation. We have summarised [the responses in a separate report](#).

---

[3] We are not able lawfully to change the assessment arrangements for a GCSE without first consulting.

[4] The qualification is largely taught in schools. We use 'schools' throughout this document to mean schools and colleges and other types of centre that offer the qualification.

[5] 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.

Our decision

The responses to the consultation have confirmed our view that, regrettably, the current situation is untenable and must be addressed to make sure the qualification is fair for all students and to preserve the credibility of the qualification itself. The responses have not persuaded us there is a better model to that we proposed in the consultation. We have therefore decided to implement the approach we proposed with immediate effect. We set out in this document how the responses to the consultation have informed our decision and the alternative options we first considered.

It is clear that most respondents agree there are significant shortcomings with the current non-exam assessment arrangements. However, views on the need for, and the desirability of, immediate changes to the assessment arrangements for the qualification are mixed. Even those who agree that immediate action must be taken are not all of the same view as to what form that action should take.

While the responses to the consultation have therefore helped us understand how the current assessment model is working and how any changes would be received, they have not revealed any one preferred course of action among stakeholders, including teachers, students and the exam boards.

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.

The options we considered

We considered a range of options before we consulted on our preferred approach. We have reflected on these and other options in light of the consultation responses which were, broadly, to:

1. make no change to the assessment arrangements for students taking their exams in 2018. Evaluate after the award in summer 2018 whether exam boards' efforts to detect and address malpractice were successful before deciding whether to make any changes for 2019;
2. base the award on students' performance in the exams only. Do not require schools whose students have not yet completed the task to give their students the opportunity to do so;
3. base the award on students' performance in the exam only. Require schools whose students who have not yet completed the task to give them the

opportunity to do so and exam boards to check that this has been done. (Our preferred option on which we consulted and the option we have now decided to implement).

Our analysis of the merits of each of these options is set out below.

1. **Make no change to the assessment arrangements for students taking their exams in 2018. Evaluate after the award in summer 2018 whether exam boards' efforts to detect and address malpractice were successful before deciding whether to make any changes for 2019.**

Many respondents to the consultation who recognised there were shortcomings with the current arrangements and supported changes to the assessment arrangements from 2019 onwards, wanted the non-exam assessment to contribute to students' grades in 2018. They were more amenable to the proposed changes being made for 2019, given that no students taking their exams in 2019 will yet have started their tasks. Two of the four exam boards shared this view.

Arguments in favour of this approach centre on the:

- extra efforts exam boards plan to make to spot and detect malpractice;
- impact on students of making changes towards the end of their two-year programme of study;
- importance of programming skills; and
- limited impact of the non-exam assessment (20% of the marks) on the overall qualification outcome.

The extra efforts exam boards plan to make to spot and detect malpractice

Before the qualification was first taught we required the exam boards to strengthen their approaches to detecting malpractice. These have not been tested to the full and so we do not yet have a full picture of how successful they will be. We therefore understand why two of the exam boards would prefer to allow the strengthened arrangements to be tried before any decision is taken on the need to change the assessment arrangements. OCR, which had the greatest share of the market for the legacy qualifications, in which incidents of detected malpractice rose sharply last year, were in favour of the changes we proposed to make.

However, we are not confident the exam boards will be able to detect and address all incidents of malpractice. They did not all quickly identify the on-line postings that were made about the non-exam assessment tasks shortly after they were released. When we brought these to their attention, they were not in all cases able to get the postings taken down. It will be impossible for exam boards to know exactly which students saw and which used (and to what extent) such postings. However, the exam

boards would have to decide when and how to sanction students who broke the rules and on the basis of what evidence. For example, they would have to decide whether to sanction a student who inadvertently came across on-line information about the task and used this information to complete the task. They would have to decide whether the same sanction should be applied to a student who consciously and inappropriately sought support. And they would have to determine the nature of any evidence that would enable them to distinguish between the two scenarios.

The exam boards had planned to equip their moderators to spot malpractice and to emphasise to them the importance of doing so. We expect this would lead to improved detection, although we doubt all cases would be found. As we explained in the consultation, if the exam boards were still investigating large volumes of suspected malpractice at the time of awarding, they might have to delay issuing results. This could further undermine confidence in the qualification, be upsetting for students and potentially delay their progression.

We also acknowledged in our consultation the risk that students could be wrongly accused of malpractice because, through their own endeavours, they reached the same solutions and offered the same analysis as those posted on the internet. It might be impossible to distinguish between such students and those who had sought inappropriate support.

If we wait to evaluate the extent to which the exam boards were able to detect and deal with malpractice in 2018 before deciding on the assessment arrangements for 2019, teachers and students would not be certain about the assessment arrangements for summer 2019 until after the 2018/19 academic year had started.

Many of the responses from teachers, their representative groups and students make clear their view that the current arrangements are not capable of delivering assessments that can withstand the pressures of malpractice. We agree.

The impact on students of making changes towards the end of their two-year programme of study

Teachers, students and exam boards raised concerns that students who had invested effort in their non-exam assessment task would feel de-motivated if their performance in the task did not contribute to their final grade. This could undermine their confidence in the qualification and their determination to perform well in their exams.

We also read strongly argued concerns that schools whose students had not yet started or completed the non-exam assessment would be able to devote more time to preparing their students for their exams, thus gaining an advantage over students whose schools had chosen to complete the non-exam assessment task earlier in the academic year. We understand these concerns. This is one of the reasons why we proposed that all schools must set aside 20 hours in their timetables for their

students to complete an exam board task (the maximum time allowed under the original rules). We also proposed that exam boards would monitor schools' behaviour and students' outputs to identify any centres that were ignoring this requirement.

Some respondents argued that requiring students to complete a task that did not contribute to the final grade would be a waste of time. However, some students told us they had learned from completing the task and developed understanding and skills that would likely enhance their performance in their exams. Some teachers argued schools would recognise the value of their students learning from doing and so would want their students to engage with a task, even if the outcome did not contribute towards the grade. They recognised the skills students are expected to use when completing the task are an important part of the curriculum.

We are sensitive to concerns about the impact of any changes on students' motivation and the need for the qualification to be fair and to be seen to be fair to all. In this context we give weight to the strongly expressed concerns that students whose breach of the rules is not detected will be advantaged relative to those who complied. We believe under the current arrangements it is likely some, and potentially a significant number of, incidents of malpractice would go undetected, and that the negative impact of this on the fairness of the qualification would be greater than the negative impact on students of changing the assessment arrangements.

We have had regard to the strength of concern expressed in consultation responses that the current situation is unsustainable. While we recognise that by acting now there is the risk students will feel demotivated, they will all have an equal opportunity to display their knowledge and skills in the exams. In contrast, if the results are, or are considered to be, unfair because of undetected malpractice, we will not be able to put this right. In this sense continuing with an assessment arrangement that is widely regarded as being open to malpractice, much of which may not be detected, risks not just bringing the qualification in to disrepute but could itself have a demotivating impact on students.

The importance of programming skills

We acknowledged in our consultation the importance of students developing an understanding of programming and of developing the skills to carry out programming tasks themselves. Many respondents agreed with our concern that the controls under which the tasks were being completed had undermined the authenticity of the experience; programming in the real world does not take place under the tightly restricted conditions of the assessment. Some suggested the restrictions had been de-motivating for students. The exam boards are considering relaxing the current restrictions if the task no longer contributes to the grade.

Some teachers argued students' programming skills would be less developed if the task did not contribute to the grade, because they would be less engaged with the task. However, others argued they could deliver a more meaningful and engaging

programming experience for students if the exam boards changed their rules around dialogue and feedback to students as they complete their task.

We acknowledge that this could mean the 2018 students would not all have the same experience, as some have already completed the task under the more restrictive arrangements. However, making the task a more engaging experience through a change to the current restrictions, could address concerns about students' motivation to complete the task knowing it will not contribute to their grade.

Some teachers told us the tasks were too demanding for less able students. The quality of those students' experience could be enhanced if teachers were able to provide some feedback.

We have concluded students' experience of completing a task could become more meaningful if, because the task does not contribute to the grade, the exam boards are able to relax the current restrictions.

The limited impact of the non-exam assessment (20% of the marks) on the overall qualification outcome

The non-exam assessment contributes 20 per cent of the marks to the qualification. Some respondents, including some of the exam boards, argued that if the non-exam assessment does not function as planned, for example because malpractice goes undetected, its impact on the grading and overall national rank-order of students will be limited.

The contribution of the non-exam assessment is less than in some of the legacy qualifications, where it was up to 60 per cent. However, we believe the assessment arrangements must make the qualification as fair as possible for all students. The qualification contributes to the government's EBacc measure, so it is important for school accountability purposes too.

Many respondents were concerned that malpractice in the non-exam assessment will go undetected. We believe students and teachers who have complied with the rules will be perturbed if others have not, despite the relatively low contribution of the non-exam assessment to the overall qualification. A low contribution to the overall qualification will not prevent individual cases where students close to grade boundaries are unfairly advantaged, through the award of a higher grade, through malpractice.

Our focus is on how best to make sure the results are fair and are seen to be fair to all students and that users of the qualification can have confidence in the results.

2. **Base the award on students' performance in the exams only. Do not require schools whose students have not yet completed the task to give their students the opportunity to do so**

Many teachers argued in favour of abandoning the non-exam assessment task altogether if it was no longer to contribute to the grade. They thought time would be better spent preparing students for their exams and students would lack the motivation meaningfully to engage with the task if it did not contribute to their grade.

We have considered the concerns raised in the responses to the Conditions. However, we believe all students should complete a task, for the following reasons:

- it provides an opportunity for students to develop and apply their programming knowledge and skills – an important aspect of the required content for the qualification;
- schools that decided their students should complete the task early in the academic year might feel those that did not will have unfairly benefited from the change because they will be able to devote more time towards the other parts of the course that will be assessed by exam;
- many students will be part-way through the task. Their experience of the qualification could be particularly badly affected if they are told to abandon it.

3. **Base the award on students' performance in the exam only. Require schools whose students who have not yet completed the task to give them the opportunity to do so and exam boards to check that this has been done.**

This was our preferred position before we consulted. The responses to the consultation have confirmed our view that this is the best approach available, although we recognise it was not, in all respects, favoured by many who responded.

We are not confident all incidents where the rules for the completion of the non-exam assessment have been breached will be found and dealt with. This would be unfair for students, who might be advantaged or disadvantaged by malpractice committed by themselves or others, and for schools in the context of school accountability measures.

For the reasons set out above, we believe all students should complete a task under controlled conditions. The exam boards are considering whether and how they might relax their current restrictions to make the task more authentic. This could, potentially, engage students who might otherwise feel de-motivated.

Some respondents told us that if schools were required to confirm they had given all of their students the opportunity to complete the task some would, effectively, fabricate any such a statement. In order to combat this, we expect the exams boards to divert the resources they would otherwise have put into moderating teachers' marking to ensuring all students were given the required opportunities to compete the task. There are other GCSE subjects for which schools are required to make a statement confirming students have been given an opportunity to undertake an

essential element of the qualification, such as in GCSE geography. As with those subjects, a school or college that was found to have made a false statement about the opportunities would be investigated by the relevant exam board under its malpractice procedures. We believe it will be easier for an exam board to identify malpractice of this type than it would be to identify malpractice by individual students who had wrongly used external support with their task.

Assessing the equality impact of the changes

We asked during the consultation whether the proposed changes could have a particular impact on students who share a protected characteristic. Most respondents did not raise specific issues. Some raised concerns that dyslexic students who find exams more challenging than non-exam assessment could be disadvantaged if their grade was determined by their exam performance alone. Others were concerned that students on the autistic spectrum might find a change to the structure of their qualification particularly distressing.

However, these concerns were balanced by views from others who reported that the non-exam assessment in the subject had been very stressful for some students and that some autistic students in particular had found the challenges of the tasks too great.

We have considered the responses to the consultation. We do not believe evidence of negative impact that could arise from the qualification being assessed by exam only is sufficient to justify us allowing the risks to the integrity of the qualification to remain unaddressed. Further, we believe that if completion of the task can become a more authentic and positive learning experience, the very students who some are concerned might be disadvantaged by the revised assessment model could, in fact, benefit.

Assessing the regulatory impact of the changes

We invited views on the likely impact of our proposed approach as part of the consultation process. We received some feedback in response.

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 monitor schools to make sure students were being given opportunities to undertake a task, we believe the costs 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 making changes to a qualification at short notice brings associated risks. We did not, therefore, favour a short-term approach whereby students' performance in their non-exam assessment would be separately graded and reported

alongside their 9 to 1 grade because of the extent of the changes exam boards and teachers in their marking would have to make to bring this about. We believe the risks that will arise from our decision are manageable.

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 recognise their workload will reduce if they do not formally have to mark the assessments.

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.

In taking our decision, we have been mindful of the 2015 Department for Education Protocol for changes to accountability, curriculum and qualifications: to introduce minimum lead in times for significant changes; and to do more to consider the impact on schools when introducing such changes.[6] Paragraph three of the DfE Protocol outlines that: 'Significant changes to qualifications, accountability or the curriculum should avoid having an impact on pupils in the middle of a course resulting in a qualification'. We have judged that the immediate changes we will make to this qualification are necessary to secure the integrity of the qualification award and maintain public confidence. This decision aligns with the Protocol which acknowledges that changes may be urgently required, for example where there is clear evidence of abuse, or a specific problem within the system.

Next steps

We will consult with the exam boards on the revised subject level conditions and guidance we will put in place to give effect to our decisions. The rules which cover the taking of the non-exam assessments are set by the exam boards themselves; we cannot change them. The exam boards are considering whether to relax their rules and, if so, how. They will communicate any changes directly.

It is important that students and their parents and carers understand the changes to the assessment arrangements and the reasons for it. We have published a statement to which they might be directed or that schools might wish to use as the basis for their own tailored communications.

6

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

We wish to make our publications widely accessible. Please contact us at publications@ofqual.gov.uk if you have any specific accessibility requirements.

OGL

This publication is available at www.gov.uk/ofqual.

Any enquiries regarding this publication should be sent to us at:

Office of Qualifications and Examinations Regulation
Spring Place
Coventry Business Park
Herald Avenue
Coventry CV5 6UB

Telephone   0300 303 3344
Textphone   0300 303 3345
Helpline   0300 303 3346